ORIGINAL ARTICLE

Status of Water and Sanitation Hygiene at Rural Sindh

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ABSTRACT

Objective: To assess the water and sanitation hygiene level at rural areas of Sindh and to determine the frequency of water related diseases.

Study Design: Cross Sectional Study

Place and Duration: Department of Community Medicine PUMHS SBA Nawabshah. From August 2010 to October 2010

Material and Methods: The situation after Supreme flood in Sindh 2010 at Rural area Hala New was observed on a sample of 166 households with systematic random sample of each 10th house hold in villages in which we were also engaged to check the Out Patients Department OPD as well. Systematic random households were selected and information was collected from questionnaires through interview & physical observation, data were entered in SPSS 17version, analyzed & results were tabulated.

Results: In our research study it is seem that rooms per house hold 42% had two rooms,with 60% kitchen at room or at outside of room, while 66% had fuel source of wooden use, in majority occupation was shopkeeper as 25%, illiteracy reflected 20%, with 34% income per month had less than PKR < 5000/= .Source of drinkable water at house hold seem in decreasing order were 74.7% hand-pump, tape water, motor water , mostly water points were not properly sealed in 60%, followed by 30% having stagnant water available around there water point or houses. While used type of toilet / latrine followed as Non-flush54%, with flush 25% and no toilet (jungle system) 20%. Persons used to wash their hands after defecation were 73%, but with soap and water only 29%. Basic house hold waste management showed 30% throw at home corner or at street corner, 36% at village side, and 34% along with animal dung at nearby home. Waste drainage system observed as partial closed at home 40%, drain in to the tank or at village stagnant pond, about 27% of the peoples are knowing that unsafe water can produce disease like abdominal pain, vomiting and diarrhea. Disease pattern dipicted, Diarrhea 41.08%, Dysentery 20.93%, Skin infection (impetigo-scabies) 19.38%, eye infections (conjunctivitis) 10.85 %, provisional hepatitis (Jaundice) 7.70%.

Conclusion: In rural community situation reflected that 73% peoples were unaware about poor water and sanitation consequences on health. The water and sanitation condition in rural community is poor and even worse as major issue. There is perfect need to aware communities regarding safe water and sanitation hygiene measures for decreasing the disease burden and improving the health of rural areas.

KeyWords: Water and Sanitation Hygiene, Rural Community, Health, Consequences,

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INTRODUCTION:

It is seem that there are improved sources of water, sanitation and hygiene behaviors of communities, in Pakistan 15 million population is choice less to get impure or unsafe water from non-purified sources[1]. At national level over 93 million population has not access to adequate sanitation in Pakistan, while in our homeland individuals 15.3 million have not opportunity for using wholesome water, it is also seem that 40,000 children are dying

every year from diarrhea due to impure water and poor sanitation in our homeland[1]. Improved source of drinkable water by nature is active intervention that can be protected and prevented from outside contamination especially of fecal matters[1].

The International organizations like WHO and UNICEF explain improved drinkable water sources mentioned as piped water in yards or plots and grounds, public water supply pipes/taps, tube well/bore, collected rain water in bottles, as secondary source are used by households is better for cooking and personal hygiene activities, while unimproved and uncovered dug wells, springs, water provided by venders by small tanks /drums on carts[2].

Sanitation is the appliance of hygiene, for promoting health, by preventing human hazards from waste by treatment and proper waste disposal of waste water and sewage[3]. Hazards or diseases which may be by means of agents that could be physical or chemical and biological or microbiological, the waste of human, animal domestic or dairy solid, liquid sewage or sludge, stagnant grey water, industrial and agricultural wastes can cause health problems that can be handled by implication of hygienic measures, by means of change in behavior and can be prevented by engineering solutions: eg: sanitary sewer, sewage treatment, solid waste excreta management by use of simple tools and techniques like pit hole latrine, septic tank, by simple hand washing practices with soap and water[3]. There is need of consideration over all, on the experience of the user waste products, disposals collection, and transportation of waste products as disposal, treatment & reuse[3].

Hygiene states the conditions and practices to help in maintaining health and preventing the spread of diseases, for example: environmental cleaning, hand hygiene, water and sanitation and safe disposal of waste[4].

Practically it is seem that simple measures of access to pure water, proper sanitation and hygiene, health education can decrease disease and death, we may lead to healthiness, by decreasing poverty and developing socio economically. Where as many developing countries has faced this challenge and provided basic needs to their communities[5].

State of water and sanitation hygiene at Pakistan in spite of high population growth has access to better water sources from 85% to 92% and adequate sanitation increased from 27% to 28% (1990 -2010) by considerable intervention and innovation at grass root level[6].

Keeping the above facts in view the current study was designed to assess the water and sanitation hygiene condition at rural area of Sindh, and to assess the demographic features regarding water, sanitation and hygiene and to determine water related diseases frequency.

MATERIAL & METHODS:

This cross sectional research study was conducted on sample of 35000 residents of 166 households of 30 villages of rural Hala new, majority (52%) of the population were female, with break of 13 villages of Bhanoth Union Council, 07 villages of Hala Old union council and 10 villages of Bhit Shah Union council, with systematic random sample of each 10th house hold in villages in which we were also engaged to check the Out Patients Department (OPD) as well. Systematic random households were selected and information was collected from questionnaires through interview and physical observation checklist, data were entered in SPSS 17version, analyzed and results were tabulated.

RESULTS:

In current study the data was collected from 35000 residents of 30 villages, whereas 4653 peoples attended the OPD as patient among them majority of cases were male above 5 years of age (Table-1). In our study the majority (38.5%) of the population belongs to age group 15 to 45 years, the break up is displayed in (Table-2). The level of literacy in most (45.2%) of the peoples was primary education (Table-3). In regard of water and sanitation hygiene data; the source of drinkable water in house hold was 74.7% by hand-pumps, water points were not properly sealed in 60% of population, while 54.8% were using non-flush toilet /latrine and 72.9 % have habit of washing their hands after defecation. Basic house

Table-1: Demographic Break up of Population

Population Age Groups	Female		Male		Total	
	Frequency	%	Frequency	%	Frequency	%
<5 yrs	2485	7.1	2450	7	4935	14.1
>6 to 10 yrs	2870	8.2	2380	6.8	5250	15
11 to 14yrs	2380	6.8	2170	6.2	4550	13
15 to 45 yrs	6895	19.7	6545	18.7	13440	38.4
>46 to 70 yrs	3605	10.3	3220	9.2	6825	19.5
Total	18235	52.1%	16765	47.9%	35000	100%

Table-2: Literacy Level

	Frequency	%
Illiterate	33	19.9
Primary	75	45.2
Matriculation	20	12.0
Intermediate	18	10.8
Graduate	15	9.0
Masters	5	3.0
Total	166	100

hold waste management revealed that 36% of peoples throw the waste at village side. Only 27.1% of the peoples were knowing that unsafe water can produce diseases like abdominal pain, vomiting and diarrhea depicted in (Table-4). Disease pattern represented, Diarrhea 41.08%, Dysentery 20.93%, Skin infection (impetigo-scabies) 19.38%, eye infections (conjunctivitis) 10.85 %, provisional hepatitis (Jaundice) 7.70% as revealed in (Table-5).

DISCUSSION:

Main sources of drinking water at house hold level in descending order were hand pump 124 (74.7%), tape water, motor water, mostly & as mentioned in demographic health study of Ethiopia showed that 54% households had access to improved drinkable water at rural 42% and urban 87%[7]. While an Indian Study depicted that 51% of the peoples depend on unprotected water of hand pumps[13].

Whereas individuals responded regarding Water point properly sealed in 66 (40%), followed by 50 (30%) having stagnant water available around there water point or around house. While used type of toilet / latrine followed as Nonflush 91 (54.8%), & with flush were 41 (25%) and 34 (20%) had no toilet or (jungle system), while other study of WHO UNICEF at Pakistan also showed unimproved (poor) sanitation status in household had not latrine facility or bucket disposal system, open latrines without privacy[8], where as an Indian study presented that 79% of their population still defecate in bushes / backyard or in the fields[13].

In our study persons used to wash their hands after defecation were 121 (73%), but with soap only 48 (30%), while an Indian study flashed that hand washing practices at important timings with soap and water was 21% and only with water was 67%[13]. Other study of African area shows that they had poor hygienic practices like no hand washing and not bathing facility with soap and water in their houses[7]. The study of Addis Ababa, also showed 74% of people are helpless to do open defecation and forced to go far distance for passing stool[9].

Basic house holds waste management showed 49 (30%) throw at home corner or at street corner, 60 (36%) at village side, and 57 (34%)

Table-3: Water and Sanitation Status

Main Source of Drinking water		
	Frequency	**%**
Hand Pump	124	74.7
Tape Water	25	15.1
Motor	13	7.8
Others	4	2.4
Total	166	100
Water Point Sealed		
	Frequency	%
Yes	66	39.8
No	100	60.2
Total	166	100
Type of Latrine		
	Frequency	%
No Flush	91	54.8
Flush	41	24.7
Open No-toilet Jungle system	34	20.5
Total	166	100
Wash Hands After Defecation		
	Frequency	%
Yes	121	72.9
No	45	27.1
Total	166	100
Disposal Of Waste		
	Frequency	%
Throw at Home corner Street corner	49	29.5
Throw at Village Side	60	36.1
Along with animal Dung	57	34.3
Total	166	100
Knowlege of House Hold persons that Unsafe water can cause disease		
	Frequency	%
Yes	45	27.1
No	121	72.9
Total	166	100

Table-4: Summary of Patients and Diseases OPD Total Patients

Total OPD patients	<5 YEARS		>5 YEARS	
	Male	Female	Male	Female
4653	894	945	1389	1425

Table-5: Disease Pattern

Diseases	No. of Patients	%
Diarrhoea	1912	41.09
Dysentery	974	20.93
Skin Infection	902	19.38
Eye Infection	505	10.85
Suspected Hepatitis (Jaundice)	360	7.75
Total	4653	100

along with animal dung at nearby home, while other studies showed that 50% of respondents made waste disposal of kitchen by throwing in the bushes or hole or burn it to make fire and also use vacant places for throwing waste[10].

In our study according to house hold respondents waste drainage system observed as partial closed at home 67 (40%), drain in to the tank or at village stagnant pond, about 45 (27%) of the peoples are knowing that unsafe water can produce disease like abdominal pain, vomiting and diarrhoea. Disease pattern depicted, diarrhoea 1912(41%), dysenty 972 (21%), as other study showed the decreases burden of parasite worms infestation and also decrease in infections of trachoma and schistosomiasis, about 37% decreased incidence of diarrhea by having improved facility of latrine[11].

And skin infection like impetigo-scabies 902 (20%), eye infection (conjunctivitis) 505(10%) when ever other studies showed in current years 30% decrease in prevalence of Trachoma by provision of latrine facilities[12], where as in our study displed provisional hepatitis 360(7.7%). In rural community situation reflected estimated 73% people were unaware about poor water and sanitation consequences on health.

CONCLUSION:

We conclude that the water and sanitation hygiene condition in rural community is poor and even worse as major issue. There is perfect need to aware communities retarding safe water and sanitation hygiene measures for decreasing the disease burden and improving the health of rural areas.

RECOMMENDATIONS:

Raise the awareness of rural community on sanitary hygiene by health education sessions and local through media i.e FM radio and TV commercials as health promotion.

Make coordination with Union Council for sanitary and drainage though formation of Hygiene committees.

Provide income generation opportunities for improving socio-economic status of rural population.

On self help basis and partial supports of NGOs can bring sustainable development in water sanitation hygiene at rural areas.

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