

## **Public Health Problems in Low and High Socio Economic Areas of Karachi, Pakistan**

*\*HA Qazi<sup>1</sup>, J Ahmed Soomro<sup>1</sup>, A Hashmi<sup>2</sup>, M Hafeez Qadri<sup>2</sup>, F Rasheed<sup>1</sup>, M Tariq Karim<sup>1</sup>*

<sup>1</sup>*Dept. of Research and Training Monitoring Cell (RTMC), College of Physicians and Surgeons Pakistan (CPSP), Karachi, Pakistan*

<sup>2</sup>*Baqai Medical University, Karachi, Pakistan*

**(Received 7 Apr 2009; accepted 29 Jul 2009)**

---

### **Abstract**

**Background:** Despite many media campaigns by government and private sectors highlighting, water and sanitation treatment plans and policies, the public health problems are still common in different socioeconomic areas. The objective of our study was to explore the major public health problems prevailing in two different socio economic areas in Karachi, Pakistan.

**Methods:** A cross sectional survey was conducted from January 1, 2008, to June 15, 2008. Convenience sampling was used to select the EVACUEE housing situated and model village. From each house selected, interviews were conducted based on one participant per house. The main outcome variables were measure of different qualities of drinking water safety, taste, etc. Problems of waste and sanitation included disposal of solid waste and leakage of drainage system in the area.

**Results:** The results found water quality to be good with safe drinking water and less residents complained in EVACUEE as compared to Model. The results also found better sanitary services with proper drainage system and less open dumping of garbage in EVACUEE as compared to Model.

**Conclusion:** Health problems of drinking water and sanitation were more prevalent in low socio economic areas as compared to higher socio economic area.

**Keywords:** *Public Health, Social Class, Water, Sanitation, Pakistan*

---

### **Introduction**

Water is the important constituent of life and no one can live or even dream of living without it (1). Sanitation is the hygienic means of promoting health by means of preventing human contact from the biological and hazardous waste (2). Studies have shown that more than 2.6 billion people constituting 40% of the world population, lack basic sanitation facilities (1).

The supply of unpolluted water with proper toilet and sewerage facilities play a vital role in preventing childhood malnutrition and solutions to address these problems which are the needed (3). In addition medical waste problem is also emerging with an increasing number of hospitals and clinics (4). Studies have shown presence of fecal coliforms, poor waste management practices and high level of metals like copper, zinc, nickel, cadmium and chromium (5-9). A

study in Sri Lanka also found high fluoride and iron content (10).

Many media campaigns have been currently running by government and private sector highlighting, water and sanitation treatment plans and policies. The question arises is “are there results satisfactory and whether inequality prevails between different socioeconomic areas”? The objective of our study was to explore the major public health problems prevailing in two different socio economic areas of one of the largest city of the world, Karachi, Pakistan. Highlights of the differences of health problems in these two areas selected were examined. The results would be used in future planning, management and implementation of policies, programs and campaigns related to public health problems such as safe water and sanitation.

## Materials and Methods

A cross sectional survey was conducted from January 1, 2008, to June 15, 2008. First, a list was prepared including all upper class and lower class societies in Karachi. Then convenience sampling was utilized to select the EVACUEE housing situated in the union council 11 of the Town of Gulshan e Iqbal and model village Block 11 in GULSHAN-E-IQBAL. Among the EVACUEE society, 100 out of 200 bungalows and 100 houses out of 2,000 houses in Model Village were randomly selected.

From each house selected, interviews were conducted based on one participant per house. The participants of age between 20-60 yr, either gender and giving informed consent. The exclusion criteria were participants who did not understand English or Urdu and were not a permanent resident. The questionnaire included variables focusing on problems of water, sanitation, and environmental pollution, etc.

The main outcome variables were safety of drinking, taste, color and odor of drinking water, hazards of drinking water. Problems of waste and sanitation included disposal of solid waste, nuisance to waste in the area presence and leakage of drainage system in the area, condition of main holes, cleaning service and disposal of rainwater.

The data was entered and analyzed in SPSS 12. The quantitative variable was duration of residence. The remaining variables defined above were qualitative and were expressed as percentages and proportions.

## Results

The level of education of residents of the two areas is shown in Table 1. About 48% of the sample population resided in EVACUEE for less than 10 yr and 25% in Model Village. Some 46% of the residents in EVACUEE and 33% in Model Village were satisfied with the quantity of water supply. About 70% of the households in EVACUEE and 77% of the households in Model City complain about the safety of drinking water.

The characteristics of water in both housing societies are shown in Table 2.

Some 14% of the residents in EVACUEE were conscious that the water they drink is contaminated against which some 16% of people in Model City were conscious of the contamination in drinking water. Some 32% of the sample population in Model City complained about the health hazards and complication of drinking water, whereas 12% in EVACUEE.

It was also showed that Model City residents complain that the municipal staff does not remove away the garbage on daily basis in 36% cases. On the contrary, the municipal staff removes the waste and filth on daily basis in EVACUEE. Model City was in unsatisfactory condition in 30% of the cases the drains were broken and water overflows in the streets posing difficulty for the pedestrians. On the contrary, in EVACUEE there was no trouble of broken drainage system or of drains overflow in the streets and roads. Main holes of the gutter lines were covered in 69% cases in Model City, whereas 98% cases in EVACUEE.

In Model City, the garbage was dumped as reported by 78% of the cases into open spaces. This action posed health dangers to a multitude of the residents. On the contrary, in EVACUEE the garbage was removed by municipal staff and open dumping was reported in 22% of cases. Some 33% of the residents in Model City stated that the rainwater was instantly removed from their localities by the municipal staff workers. In EVACUEE, the rainwater was not stagnated in the streets and roads.

## Discussion

The above results clearly found water quality to be good with safe drinking water. There were more satisfaction of quantity of water supplied and less complains about safety and contamination of drinking water in EVACUEE. The results also found better sanitary services and streets conditions with proper drainage system and less open dumping of garbage in EVACUEE as compared to Model.

**Table 1:** Level of education of selected participants in evacuee housing society and model village

Education	Model village		Evacuee Employees Housing Society	
	Frequency	Percent	Frequency	Percent
Primary	5	5	2	2
Middle	9	9	4	4
Secondary	18	18	22	22
HSC	34	34	8	8
Graduate-above	34	34	64	64
Total	100	100	100	100

Primary= 1-5<sup>th</sup> class, Middle= 6-8<sup>th</sup> class, Secondary= 9-10<sup>th</sup> class, HSC (Higher Secondary Class)= 11-12<sup>th</sup> class, Graduate-above= 13<sup>th</sup> class-16 class and above

**Table 2:** Characteristics of drinking water as commented by residents of evacuee society and model village

Water Characteristics	Model Village	EVACUEE society
Colour	Transparent 36%	Transparent 52%
Taste	Turbid 64%	Turbid 48%
Smell	Stinky 21%	Stinky 14%

The study conducted in 2003 in rural Peshawar (Pakistan) found an alarming picture. About 13% of well water was found as safe. Forty percent were found as satisfactory while about 47% were highly polluted (8). Furthermore, 9% of the initially clean at source samples were found grossly contaminated after storage (8). The study showed some 46% of residents in EVACUEE and 33% of residents in Model City were satisfied with the quantity of the water supply. About 70% of the households in EVACUEE and 77% households in Model City complained about the safety of their drinking water and health. Again, this reiterated the alarming results previously found.

A study in Brazil showed that of the 65 water samples analyzed, 89.2% found the presence of fecal coli forms, with no adequate sanitary disposal for the disposal of solid wastes (5). This study also showed that in Model City, the garbage was dumped into the open in 78% of the cases posing health dangers to a multitude of the residents. On the contrary, in EVACUEE the garbage was regularly removed by municipal

staff workers and open dumping was reported by just 22% of study participants.

Health problems of drinking water and sanitation were more prevalent in low socio economic areas as compared to higher socio economic area. Health promotion models should be developed focusing on low socio economic groups and areas in order to promote equity, equality, effectiveness and efficiency.

### Acknowledgements

The authors declare that there is no conflict of interests and the study was based on a self-funded base.

### References

1. Pandey S (2006). Water pollution and health. *Kathmandu Univ Med J*, 4(1): 128-34.
2. Pope CT (2008). Sanitation and drinking water: is the world on track? *Circle of Blue*, Available from: <http://www.circleofblue.org/waternews/world/sanitation-and-drinking-water/>

3. Naz F, Shamim S, Ali SS (2007). Effects of water and sanitation on childhood nutrition in Pakistan. *Pak Paed J*, 31(2): 69-74.
4. Hassan MM, Ahmed SA, Rahman KA, Biswas TK (2008). Pattern of medical waste management: existing scenario in Dhaka City, Bangladesh. *BMC Public Health*, 8: 36.
5. Giatti LL, Rocha AA, de Toledo RF, Barreira LP, Rios L, Pelicioni MC, et al. (2007). Sanitary and socio-environmental conditions in the Iauaretê indigenous area, São Gabriel da Cachoeira, Amazonas State, Brazil. *Cien Saude Colet*, 12(6): 1711-23.
6. Kallon SB (2008). Pollution and sanitation problems as setbacks to sustainable water resources management in Freetown. *J Environ Health*, 71(5): 34-7.
7. Rashid S, Yaqub M, Afzal H, Ali M, Hussain F (1996). Evaluation of some heavy metals (Ni, Pb, Cu, Cd, Zn and Cr) from drinking water of Faisalabad city. *Professional Med J*, 3(4): 317-23.
8. Zahoor Ullah, Akhtar T, Zai S (2003). Quality of drinking water in rural Peshawar. *Pak J Med Res*, 42(3): 85-9.
9. Jaleel MA, Noreen R, Abdul Baseer (2001). Concentration of heavy metals in drinking water of different localities in district East Karachi. *J Ayub Med Coll Abbottabad*, 13(4): 12-5.
10. Bandara NJ (2003). Water and wastewater related issues in Sri Lanka. *Water Sci Technol*, 47(12): 305-12.