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Water Quality, Water Borne Diseases and Women: A Study in Vellore District

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ABSTRACT

The most perplexing dilemma faced by the health sector in developing countries like India is the emergence of a number of water borne diseases which incur considerable medical expenses by the households to get treated. The reasons for this scenario include complexities in economic and social activities, exploitation of ground water by using the de facto ownership of land, growth of urbanization and industrialization. The most affected in this unfavourable health situation are women from the poor households in rural areas. Unless the public health functionaries work in tandem with the avowed objectives of state policies, the consequences can leave the poor more vulnerable in future. This suggestion has been the outcome of a field survey conducted among 142 households in two villages of Kaniyambadi block in Vellore district, Tamil Nadu.

KEYWORDS

Introduction

There is no second opinion that lack of adequate and safe drinking water causes ill-health and malnutrition among a large proportion of India's population. The absence of adequate quantity and quality of water increases the incidence of a host of diseases. And it has a direct bearing on health, one of the most important dimensions of human well-being. It exerts a strong negative impact on economic growth across the state. Higher expenditure on health and out of pocket payments has led to further loss of income. Poverty and lack of water and sanitation an assault on human dignity. With receding public sector amenities, the health shocks have exerted direct impact on household expenditure. Further, poor quality water consumes most of women's time and energy in collecting, purifying and storing. All these issues are to be addressed with field level data and information so as to suggest worthy policy measures.

Objective

To bring out the issues related to quality of water, water borne diseases and the expenses incurred by women in selected villages.

Survey Methodology

The study is based on a survey of 142 households (20% of the total households) selected randomly from two villages in rural Kaniyambadi block, Vellore district in Tamil Nadu. Water samples from two stations in the study area were collected and analyzed in the TamilNadu Water Supply and Drainage Board (TWAD), Vellore. Personal interviews were made with 142 women respondents in a face -to –face setting using the pre-designed interview schedule. Information related to the health aspects of the respondents, defensive expenditure in order to purify the water, type of water borne diseases the individual suffered prior to three months of the survey period, the length of morbidity reasons for the occurrence of the disease, type of treatment received, loss of income and preventive measures taken by the sample households were covered by the survey.

Water Quality issues

Consumption of poor quality of water has its poor backward linkages i.e. incidence of water borne diseases. As per the macro level data published by Ministry of Water Resources and Ministry of Drinking Water and Sanitation (2016) drinking water contamination is at its worst (now) since independence, with more than half of the districts in the country affected, and hundreds of people dying of illness caused by tainted water every year. The number of deaths due to ground water contamination in 2014 and 2015 across India is 514; the number of habitations affected is 59,536 and the number of people affected is 3.29 crores. In the selected villages too the Total dissolved solids (TDS) and Turbidity and Electrical Conductivity are more than the permissible limits. From the results it is clear that the water in the selected villages is not potable. E.coli is also found present in the samples.

Economic characteristics

Seventy four out of the 142 are agricultural labourers, eleven are farmers, thirty one are mostly employed in construction works and the remaining twenty six are engaged in cattle rearing as the major economic activity. Their housing conditions reflected their poor economic condition and a few fall under lower middle income class category. Seasonal employment in the agricultural sector leads low income and many of them supplementing their income by rearing livestock.

Gender issues

Across the globe, women invest significant amounts of time for collecting water for drinking, cooking, and washing. They also manage household hygiene. Women generally know the locations of existing water sources, their quality and reliability, and any restrictions on their use. However, the pivotal role of women as providers and users of water and guardians of environment is rarely reflected in institutional arrangements for the development and management of water supply and sanitation and other water resources. In the study villages women found waging a struggle in collecting drinking water from the village panchayat pipelines. They used about 30-40 liters of water per household for drinking and cooking, 160-170 litres for washing dishes and clothes, cleaning, for baths and after toilet visits. The results showed more than half (68%) of the households in the sample villages using public taps for consumption which is followed by irrigation wells (20%) and individual house connections (12%).

Table.1 Water and Sanitation facilities

Characteristics	Percentage
Water source	
Public water supply / street taps	68
Household connection	12
Irrigation wells	20
Time for fetching water	
1-2 hours	92
2-3 hours	8
Toilet facility	
Yes	71
No	29

Source: Primary data

Almost all of them spent one to two hours in collecting water supplied by the Village panchayat through street pipelines. The water supply is given once in a week and that too for one or two hours only. An impact of awareness about the cleanliness resulted in majority (71%) of them using toilets.

Cleanliness and Waterborne diseases

The cleanliness and hygiene practices adopted by the women in selected households revealed their poor exposure and lack of health consciousness. Only a very few of them used water filters. The method of storing of water has been found as poor. They not even wash their hands properly after defecation. Washing hands before cooking and eating was found as absent. The surrounding areas found as dirty and increases the incidence of waterborne diseases.

Table.2 Hygiene Practices

Characteristics	Percentage
Water purifying methods	
Not purified	88
Strain by cloth / boiling	5
Water filter	7
Storage of water	
In uncovered container	56
In covered container	44
Keeping food covered	
No	63
Yes	37
Washing hands after defecation	
No	53
Yes	47
Washing of hands before cooking and eating food	
No	77
Yes	23
Wastewater stagnation outside the household	
No	2
Yes	98

Source: Primary data

Among the 142 women, 64 per cent of them felt that the water is dirty and 29 per cent reported that the water is bathable and not for drinking. In spite of that they are forced to drink the same water. As being poor they are not able to spent money on water purifiers. A few found using boiled water. A common perception has been that boiled water can be necessary only during fever. All these beliefs and poor quality of water made them to suffer from one or two health hazards. All the 142 women interviewed reported illness in their families during the last three months prior to the survey.

Table.3Quality of water as stated by the Respondents

Quality of water	Percentage
Dirty	64
Bathable	29
Very good – drinkable	2
Cannot say	5
Total	100

Source: Primary data

Mostly the 29 children under- five years of age are affected by Diarrhea. Some women reported skin allergy, pain in knee and joints, loss of appetite and throat infection and respiratory problems. For treatment they resorted to Public health facilities like Primary Health Centres. A few of them went to private clinics and those who are affected by orthopedic problems are found as worst sufferers and taking medicines for a long time spending considerable amount on medicines. Medical expenses came to 12% of the total family income mostly on water borne illnesses. Around 34 per cent of them utilized private medical care and reported early recovery than who went in for public health centres for treatment.

Table.4 Water borne illnesses stated by the Respondents

Water-borne illnesses	No of Cases
Diarrhea	58
Skin problems	15
Orthopedic problems	46
Loss of appetite	17
Respiratory problems	16

Source: Primary data

Economic Consequences

The economic impact of the water borne diseases had a three dimensional impact: loss of wages due to sickness, expenditure on treatment / medication and the loss of wages / income to the attendants. The lost one is more pronounced in the case of families where under-five children are affected by fever, diarrhea and respiratory problems.

Conclusion

The evidences collected from the households and the details obtained from the functionaries brought out the health complications associated with the quality of water used for drinking and domestic purposes. The incidence of diarrhea among the under- five children category was found as very high. The women reported skin allergy, pain in knee and joints, loss of appetite and throat infection. To remedy the situation extension of public health care system is a must.

References:

1. Anitha K, 2016, 'Public Health Care Dilemma in Kerala: The Vector Borne Disease Challenge', Southern Economist, August, 15, pp. 12-14.
2. Das Gupta, Monica, Desikachari B.R., Rajendra Shukla, Somanathan T.V., Padmanaban P., Datta K.K, 2010, 'How might India's Public Health Systems Be Strengthened? Lessons from Tamil Nadu', Economic and Political Weekly, Vol.XLV, No.10, pp .46-58.
3. Fewtrell, L., A. Pruss Ustun, R.Bos, F. Gore and J.Bartram, 2007, Water, Sanitation and Hygiene: Quantifying the Health Impact at National and Local levels in Burden of Disease due to Selected Major Risk Factors, pp. 39-162. Geneva: World Health Organization.
4. Pandey, S., 2006, 'Water Pollution and Health', Kathmandu University Medical Journal (KUM), 4(1): 128-34.