

STUDY ON SOCIOECONOMIC STATUS AND SOURCE OF WATER IN THOOTHUKUDI DISTRICT

Dr.M.S. Rubha

*Associate Professor, In Food Science and Nutrition,
Holy Cross Home Science College, Thoothukudi.*

Abstract:

The primary sources of drinking water are groundwater and surface water, in this direct noted association between poor water quality and infectious diarrhoea. The present study was carried out both in rural and urban areas of Thoothukudi district. A large proportion of the stored water in houses was found to be contaminated and therefore promotion of household water treatment and safe storage combined with hygienic practices would be very useful in preventing waterborne diseases. Microbiologically contaminated water is a cause for concern as many diseases such as Diarrhoea, cholera, typhoid etc. are caused by contaminated water.

Keywords : *Diarrhoea, hygienic, diseases, water borne*

Introduction

Water is the elixir of life, a precious gift of nature to mankind and millions of other species living on the earth. Tamil Nadu constitutes 4 percent of India's land area and is inhabited by 6 percent of India's population, but has only 2.5 percent of India's water resources (Amer 1995). More than 95 percent of the surface water and 80 percent of the ground water have already been put into use. Major uses of water include human/animal consumption, irrigation and industrial use. One of the primary differences between rural and urban housing is that much infrastructure that is often taken for granted by the urban resident and does not exist in the rural environment and the range from fire and police protection to drinking water and sewage disposal (Azeez 2000)

Water Sources In Rural And Urban Areas:

The primary sources of drinking water are groundwater and surface water. In addition, precipitation rain and snow can be collected and contained. The initial quality of the water depends on the source. Surface water such as lakes, reservoirs, streams, and rivers are the drinking water source for approximately 50% of our population, is generally of poor quality and requires extensive treatment. Groundwater, the source for the other approximately 50% of our population, is of better quality. It still may be contaminated by agricultural runoff or surface and subsurface disposal of liquid waste, including leachate from solid waste landfills. Other sources, such as spring water and rain water, are of varying levels of quality, but each can be developed and treated to render it potable (Handa B.K 1975).

The researcher believes that increasing the awareness on water systems consist of a water source such as a well, public tap water lake, river, some type of tank for storage, and a system of pipes for distribution. Means to treat the water to remove harmful bacteria or chemicals may also be required. The system can be as simple as a well, a pump, and a pressure tank to serve a single home.

It may be a complex system, with elaborate treatment processes, multiple storage tanks, and a large distribution system serving thousands of homes (Singaraja C et al 2012). Regardless of system size, the basic principles to assure the safety and potability of water are common to all systems. Large-scale water supply systems tend to rely on surface water resources, and smaller water systems tend to use groundwater.

Groundwater is pumped from wells drilled into aquifers. Aquifers are geologic formations where water pools, often deep in the ground (Magesh N.S et al 2011). Some aquifers are actually higher than the surrounding ground surface, which can result in flowing springs or artesian wells. Artesian wells are often drilled; once the aquifer is penetrated, the water flows onto the surface of the ground because of the hydrologic pressure from the aquifer. Thus the study entitled "Study on socioeconomic status and source of water in Thoothukudi District"

Methodology:

- Selection of study area
- Sampling methods
- Assessment of socioeconomic status of the selected samples
- Creating awareness on availability of clean water, and to improve sanitation and hygiene

Selection Of Study Area

The present study was carried out both in rural and urban areas of Thoothukudi district of Tamil Nadu. Thoothukudi district is situated in the extreme south east of Tamil Nadu state and this district is divided into eight taluks (Administration unit within a district) as Thoothukudi, Tiruchendhur, Srivaikundam, Sathankulam, Kovilpatti, Ettayapuram, Vilathikulam, and Ottapaidaram. were selected for investigation.

The population of Thoothukudi district is a mix-up of people with high income low income, high development and poor economic growth. There are also illiterates and unemployed. People work as agriculturists, fishermen, domestic workers, and are engaged in business. Many also work as coolies in salt pans, small scale industries and factories (Mondal N.C. 2010).

Various water sources such as springs, wells, handpumps, water stored in reservoirs and in household storage system were studied - In this studies and outbreak investigations have found a direct association between poor water quality and infectious diseases (Selvam S et al 2012). Where it is not only water contaminated at the source or during distribution that is an issue, but also water stored within the home which may become contaminated. Awareness were provided to increase the availability of clean water, and to improve sanitation and hygiene.

Sampling Methods

Each area the samples were selected randomly sample, taken as close to the actual source itself mainly Public stand tap, well and handpump, microbiological contamination could occur at points of leakage at any stage in between the source and tap, as well as through careless storage/handling in the house (Srinivasamoorthy K. et al 2011) . From the selected 610 families only 410 were selected for the study.

Result And Discussion

1. Depicts the type of families

Table 1

Type of family	No.	Percent
Nuclear	313	76.3
Joint	97	23.7
Total	410	100.0

Table 1 shows the details of the type of family majority of the families i.e about 76.3 per cent were from nuclear families and about 23.7 per cent were from joint families.

2. Details the size of the families

Table 2

Family Size	No.	Percent
4 members	300	73.2
6 members	65	15.9
> 6 members	45	11.0
Total	410	100.0

Table 2 reveals that the majority of the family size i.e. about 73.2 per cent were in small size families. Medium size was about 15.9 per cent and 11.0 per cent lived in large size families.

3. Distribution of education of the fathers

Table 3

Education of the fathers	No.	Percent
Illiterate	111	27.1
Primary	179	43.7
Secondary	120	29.3
Total	410	100.0

Table 3 indicates the distribution according to the education of the fathers. Majority of the them i.e. 43.7 per cent were educated up to primary level and by one third of the father up to higher secondary level and 27.1 per cent of the fathers were illiterates.

4. Indicates the education of the mothers

Table 4

Mothers' education	No.	Percent
Illiterate	120	29.3
Primary	158	38.5
Higher Secondary	122	29.8
Under graduate	10	2.4
Total	410	100.0

Table 4 gives a picture of the distribution according to the education of the mother. Majority of them were educated up to primary level. One third of them completed were up to higher secondary level and another one third of the mothers were illiterate. Negligible number of mothers were graduate.

5. Reveals the occupational status of the fathers

Table 5

Occupation of the fathers	No.	Percent
Daily wages	159	38.8
Agriculture	107	26.1
Fishing	72	17.6
Business/ Trade	23	5.6
Unemployed	49	12.0
Total	410	100.0

Table 5 explains the occupational status of the fathers. About 38.8 per cent were employed on daily wages. About 26.1 per cent of them practised agriculture. The occupation of 17.6 per cent was fishing; negligible per cent of them did business trade. Minimum per cent was unemployed.

6. Indicates the occupational status of the mothers

Table 6

Occupation of the mothers	No.	Percent
Daily wages	158	38.5
Agriculture	113	27.6
Teacher	12	2.9
House wife	127	31.0
Total	410	100.0

Table 6 shows the occupational status of the mothers. Majority of the mothers earned daily wages. About one fourth of them were house wives. Very negligible per cent of the mothers were teachers. About 27.6 per cent were doing agriculture.

7. Depicts the monthly income of the families

Table 7

Monthly income of the families	No.	Percent
3000-5000 low	192	46.8
5000-10000 middle	189	46.1
>15000 high	29	7.1
Total	410	100.0

Table 7 explains the distribution of monthly income. The income of majority of them was Rs 3000- 5000 per month, and middle income was Rs 5000- 10000 and a minimum were with high income of > 15000 per month.

8. Distribution for the source of drinking water

Table 8

Drinking Water	No.	Percent
Public Tap	269	65.6

Hand pump	88	21.5
Well	22	5.4
Spring	31	7.6
Total	410	100.0

Table 8. portrays the source of drinking water. From the table it is clear that majority of them were getting tap water. About 21.5 per cent were availing water from the hand pump. About 7.6 per cent and 5.4 per cent were getting drinking water, from the other sources like well water and spring water.

9. Explains the type of houses

Table 9

Type of Houses	No.	Percent
Hut	17	4.1
Tin - sheet	220	53.7
Asbestos roof	113	27.6
Terraced house	60	14.6
Total	410	100.0

Table 9 describe the distribution with regard of their type of houses. It is evident that most of them about 53.7 per cent were living in tin - sheet houses. One fourth of them were residing asbestos roof houses and 14.6 per cent were having with terraced houses and minimum per cent were staying in the huts.

10. Depicts the toilet facilities for the selected adolescent girls

Table 10

Toilet facilities	No.	Percent
Private	343	83.7
Common	67	16.3
Total	410	100.0

Table 10 represents the sources of toilets in the houses. Majority of the them had private toilet. Minimum per cent used common toilets.

Conclusion

The study was very useful in understanding socio economic and the water quality situation in the district physical and bacteriological parameters were studied. There is a need to promote household water treatment through boiling, filtration, solar disinfection of water, adding chlorine depending on the type of water and safe storage at the household level. In rural area majority of the people not getting regular water stored in the house 15 days. Compare to urban area microbiological contamination could occur at points of leakage at any stage in between the source and tap, as well as through careless storage, handling in the house.

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