

House Hold Water Management -Findings of Water Sanitation Survey From Kozhikode District

Ms Sindhu Kizhakkeppattu¹, Prof .Dr (Mrs).D.Karaline Karunagari²,

¹.Research scholar Annamalai University ,Thamilnadu

². Professor, Rani Meyyammai College of Nursing, Annamalai University ,Thamilnadu

Abstract

Background: WHO (2019) cites that, Sustainable Development Goal target 6.1 calls for universal and equitable access to safe and affordable drinking water. The target is tracked with the indicator of “safely managed drinking water services” – drinking water from an improved water source that is located on premises, available when needed, and free from faecal and priority chemical contamination. So in order to identify the household water management practices a house hold survey on household water management was undertaken

Materials and method. water sanitation survey was carried out to assess the household water management which included the assessment of common sources of water supply to rural households, storage of water, purification and disinfection of water and prevention of water pollution among 250 adults from 250 rural households .Participants were selected using systematic random sampling From 3 different wards of a panchayat from Kozhikode district, Kerala. The collected data was analyzed using descriptive statistics.

Results: Findings of the study showed that More number of the sample are in the age group of 50 to 59(40.4%).The minimum number of participants are in the 20 to 29 age category that is nine percentage .The mean age of participants was 47.25+-9.306.majority were females (73.2%).majority had high school education (46%) have no job 55.6% and belong to APL Category (61.2%). the main water supply to rural household is well water supply i.e. 88.4%. Majority took less than 5mts to get water (77.6%). majority 78% took less than 10 meter to fetch water .the main method of storing water for household purpose is in plastic containers (50.4%) all house hold have RCA type of latrine.

Conclusion

The findings necessitates the need for interventions to ensure measures for proper household water management interventions on household water management among rural adults for promoting use of safe drinking water.

Key words: house hold water management, rural households, water sanitation survey

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I. Introduction

Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and can contribute greatly to poverty reduction.

Sustainable Development Goal target 6.1 calls for universal and equitable access to safe and affordable drinking water. The target is tracked with the indicator of “safely managed drinking water services” – drinking water from an improved water source that is located on premises, available when needed, and free from faecal and priority chemical contamination. Absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks. As per fact sheets WHO (2019) is particularly the case in health care facilities where both patients and staff are placed at additional risk of infection and disease when water, sanitation, and hygiene services are lacking. Globally, 15% of patients develop an infection during a hospital stay, with the proportion much greater in low-income countries. Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, and polio.785 million people lack even a basic drinking-water service, including 144 million people who are dependent on surface water.

Globally, at least 2 billion people use a drinking water source contaminated with faeces. In India as per the statistics 85% of the rural households have access to drinking water within or near. Their near to their premises.70% of India's improved household water sources were polluted with sewage effluents (uniform drinking water quality monitoring protocol. India New Delhi Ministry of Drinking water and sanitation 2013)

Among all states in India, Kerala possess several peculiar characteristics such as higher standard of living, life expectancy, birth rates etc. Kerala has achieved this attracting development through facilitating basic

infrastructure like safe drinking water and sanitation. In spite of all the achievements the current system of household water provision in Kerala are unable to provide proper and safe access to drinking water for a large section of the population (Government of Kerala. Water resources department, Water policy. 2008.) Nurses need to be aware of the challenges of ensuring drinking water is safe while working along with communities and increase public awareness. In a community needs resource assessment study on promoting safe drinking water, water pollution was found to be a as a major concern among the community services³ .so study was under taken to assess the household water management

II. Materials and method

A cross sectional descriptive study was conducted to assess the household water management the main objectives of the study was to assessment of the common sources of water supply to rural households, identify the measures adopted by rural adults for storage of water, purification and disinfection of water and prevention of water pollution measures used for water conservation and disposal of waste water .the study was conducted among 250 adults from 250 rural households

Study location: Study setting was one of the panchayath of Kozhikode district. Kozhikode district was purposely selected, which is located in the western coast of Kerala. According to 2011 census Kozhikode district has a population of 3, 089543.and has a population density of 1,318.per square kilometer.one panchayath was selected from Kozhikode district. Mavoor is a panchayath in the state of Kerala and is under Kozhikode Zillah panchayat and Kunnamangalam inter panchayt. Mavoor is 20 km east of Kozhikode city, beside the river Chaliyar. From the panchayath three wards were selected randomly.

Study duration: April to June 2019

Sample size .250 rural adults from 250 rural households residing at a selected Panchayath of Kozhikode district for the present study.

Subjects and selection method.

Inclusion criteria

One adult residing in one house hold

- Available during the time of data collection
- Willing to participate in the study

Finding

More number of the sample are in the age group of 50 to 59 years (40.4%).The minimum number of participants are in the 20 to 29 age category that is nine percentage .The mean age of participants was 47.25+-9.306.majority were females(73.2%).Majority had high school education (46%)have no job 55.6% and belong to APL Category (61.2%).Most of the participants are married(72%) ,58% belongs to nuclear family Table 3 shows that 56.8% of participants have more than 4 family members.14% of participants are from households having 3 or less than 3 family members

Table 1.Distribution of participants based on age n=250

Age in years	Frequency	Percentage	Mean age	SD
20-29	9	3.6	47.25	± 9.306
30-39	50	20		
40-49	75	30		
50-59	101	40.4		
≥60	15	6		

Table 2.Distribution of participants based on educational status occupation and economic status

Educational status	Frequency	Percentage
Literate	10	4
Primary	72	28.8
High school	115	46
Higher secondary	38	15.2
Degree above	15	6
Occupation		
Govt	7	2.8
Private	17	6.8
Professional	4	1.6
Agriculture	8	5.2
Business	21	8.8
Coolie	20	8.0
No job	139	55.6
Others	34	13.6

Economic status		
APL	153	61.2
BPL	97	38.8

Table 3

Distribution of participants based on marital status, type of family and number of family members

Sl.no	marital status	frequency	Percentage
1	Married	180	72.00
2	Unmarried	29	11.60
3	Divorced	10	04.00
4	Widow/widower	22	08.80
5	Living separate	9	03.60
	Type of family		
1	nuclear family	145	58
2	Joint family	102	40.8
3	Extended family	3	1.2
	Number of family members		
1	>3	35	14
2	4	73	29.2
4	5	71	28.4
5	≥6	71	28.4

Majority of participants (99.2 %) were having own land and house.

Table 4 Distribution of subjects based on source house hold water supply, source of drinking

Characteristic	No	Percentage
Sources of water	well	213
	Tube well	2
	Piped water	8
	Common well	1
	Well pond water	3
	Well and river	4
	Well and piped water	19
Source of drinking water	Well	220
	Piped water	8
	Common well	1
	Well an piped water	19
	Tube well	2
Distance between water source and house	5 and less than 5 meter	189
	5.1 -10 meter	47
	10.1-15metre	06
	15.1-20metre	04
	≥20.1 and above	04

Table 4 shows the Distribution of subjects based on source house hold water supply, source of drinking water, distance between well and house.

Distribution of subjects based on the source of water shows that 85.2% of the subjects are having household well as the source of water supply. well

Distribution of subjects based on the source of drinking water shows that 88% is using household well as the source of drinking water. The findings reveal that the major source of water supply to rural house hold were household wells. The distribution of subjects base on the distance between water source and house shows that majority of the water sources 75.6% are located less than 5meters from the houses . The majority of households well is situated within 5meters from the house with mean distance of 10.146±7.06.

Table 5
Details of water scarcity .

Time	frequency	Percentage
No scarcity	212	84
Scarcity present	38	16
Reason for scarcity		
draught	36	14.4
Water become impure	2	0.8
Month during scarcity experience		
From march	7	2.8
From April	15	6
From may	16	6.4
Source during scarcity		
Public water	30	12

Nearby well	8	3.2
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Table 6 shows that majority of household doesn't have scarcity of water 84%, mainly it is due to drying up. That also in the month of April and May.

Measures used for storage of water

Table 6
Distribution of participants based method of storing water for drinking purpose

Method of storing drinking water	method	frequency	Percentage	
Method of storing drinking water	Not storing water	14	05.60	
	Plastic containers	130	52.00	
	Commercial tanks	31	12.40	
	Brick lined tanks	05	02 .00	
	Aluminum pots	15	06.00	
	Closed steel container	30	12.00	
	Open steel pot	10	04.00	
	Earthen pot, aluminum ,plastic pots	01	0.40	
	Earthen pot	02	0.80	
	Plastic and steel	03	1.20	
	Aluminum and plastic	06	2.40	
	Aluminum and steel	03	1.20	
	Method of disinfecting drinking water	Do not disinfect	14	05.60
		Boiling	163	65.2
Commercial filters		10	4	
Chlorination		07	02.80	
Boiling and irregular chlorination		56	22.40	

Table 6 shows the distribution of participants based on method of storing water for drinking purpose at the house hold and the methods used for disinfecting drinking water. It shows that the main method of storing water for household purpose is in plastic containers. The distribution of participants based on method of disinfection of water for drinking and it shows that 59.2% of people are using boiling as a method of disinfection. But 5.6% is not disinfect water. All house hold have RCA type of latrine .

Table 13. Presence of waterborne diseases during the last 6 months

Type of waterborne disease	Frequency	Percentage
cholera	4	1.6
Acute diarrheal disease	13	5.2
Typhoid fever	12	4.8
Hepatitis	3	1.2
leptospirosis	1	0.4
No history of water borne disease	217	86.8

Within the last 6 months period 13.2% had history of waterborne disease in the household 4 cases of cholera and 12 cases of typhoid fever was reported from the house hold was reported. Most of the families are not using water conservation measures 62.8% among those who use it majority had rain harvesting. For water disposal except from toilet there were no specific disposal method to majority of the participants.

III. Discussion

Water is the major precious resource needed for the life of the living being. Clean and safe water is a major concern for the maintaining a healthy life style and also to maintain the public health of the country. Safe water supply and good sanitation facilities try to control waterborne diseases and reduce the morbidity and mortality. Present study was attempt to identify the existing water management among rural households.

The study used a descriptive survey approach .the mean age of participants was 48.14+_9.11 years and were females (77%) and 53 % have high school education. and majority were females (73.2%) All the households' drinking water supply was from the dug well, with an average distance of 5.59+_10.5 m from the house compared to 93% as dug well as a water source with 86% of the wells within the premises in a in a study conducted by Jayakrishnan T etal (2016) ,the mean distance from the well to the rural house hold had a mean 7.7+-12.2m and in a study conducted by Dean, AJ (2016)on community knowledge about water among Australian adults (mean age 46.9±16.3years; 50.9% female), had qualifications beyond high school (69.1%) .

In a cross sectional study by Pachori (2016) on water and sanitation among 300 households 51.3% were females, educated upto matriculation (53.3%).

In a study done by Pradhan etal (2018) the objective of the study was to assess household water treatment and safe storage (HWTS) practice. Majority had piped connection (32%) followed by public standpipe

(31.2%), hand pump (27.6%) as source of water. 60% had knowledge about boiling followed by chlorination 27%, membrane filters 22.4%. Majority i.e. 63% of the participants had thought boiling as the best method for disinfection of drinking water. Most of them stored water in steel utensils (36.4%) Forty-five percent of the participants were not following any methods of water treatment and among them half of the participants felt that water available to them was clean and did not require any additional treatment. Twenty-five percent of the participants surveyed did not have access to toilets inside their household. In the present study only 2.8% uses regular chlorination for disinfection. All participants had RCA type latrine

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