IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 10 Ser.4 (October. 2019), PP 60-65
www.iosrjournals.org

A Cross Sectional Study on Water, Sanitation And Hygiene(WASH) Practices Among Households in the Urban Field Practice Area of Guntur Medical College,Guntur, AP.

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Abstract:
Introduction*: Safe drinking water,basic sanitation and proper hygiene are found to be most important for reducing the burden of many communicable diseases like acute diarrhoeal diseases,acute respiratory diseases etc. Still many communities in and around india lack adequate water supply and proper sanitation.* ***Materials and methods****:A cross sectional study was conducted among 100 residents of Mallikarjunapet, Guntur selected by simple random technique during the period between March 2019 to May 2019 to assess water,sanitation and hygiene practices.* ***Results:*** *Nearly 76% of the households have piped water supply.79% of the households own a sanitary latrine while 61% wash their hands properly.*
Key words*:WASH strategy,Sanitation,Hygiene*

Date of Submission: 21-09-2019 Date of Acceptance: 10-10-2019

I. Introduction

Water, sanitation and hygiene(WASH) strategy has been introduced as a part of sustainable development goal-6 to achieve universal,affordable and sustainable access to safe drinking water, sanitation and hygiene by 2030.[1] The WASH strategy adapts our approaches to meet the new and emerging demands of the sustainable development agenda such as climate change, urbanization, water scarcity and more. [2.] The human rights to water and sanitation are at the core of the UNICEF mandate for children. Not only are poor hygiene, open defecation, and lack of access to safe water and sanitation systems leading causes of child mortality and morbidity, they contribute to undernutrition and stunting, and act as barriers to education for girls and to economic opportunity for the poor.[3]

Water, sanitation and hygiene (wash) are critical in the prevention and care for all of the 17 neglected tropical diseases (NTDs) scheduled for intensified control or elimination by 2020[4].Focused efforts on wash are urgently needed if the global NTD roadmap targets are to be met. This is especially needed for NTDs where transmission is most closely linked to poor wash conditions such as soil-transmitted helminthiasis, schistosomiasis, trachoma and lymphatic filariasis. Global access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, leading to improved health, poverty reduction, and socio-economic development. However, many countries are challenged to provide these basic necessities to their populations, leaving people at risk for WASH related diseases.[5]

Communicable diseases continue to be the major contributor to global morbidity and mortality. Microbiological contamination of water sources is a common problem in many countries and chemical contamination (notably Arsenic and fluoride) is increasingly a concern.[2]A safe water supply has been defined as a source which is likely to supply water which is not detrimental to health.

In 2015, World Health Organization estimated that "1 in 3 people/2.4 billion are without sanitation facilities. 663 million people lack access to safe and clean drinking water."[2]

Proper wash practices have shown to increase the access to household toilets for 3,00,000 people,open defecation free communities to 25000 and safe drinking water for more than 1,25,000 people.[6] In India each year, 60,700 under-five year children die from diarrhoeal diseases due to lack of proper sanitation facilities.

From the 42 studies reporting hand washing prevalence Freeman et al estimate that approximately 19% of the world population washes hands with soap after contact with excreta. Meta-regression of risk estimates suggests that handwashing reduces the risk of diarrhoeal disease by 40% (risk ratio 0.60, 95% ci 0.53–0.68). [7]

In a study conducted in Assam, India it was observed that, out of 384 cases, 330 women (86%) always washed their hands before cooking food while 16 women (4%) never washed their hands prior to cooking. 93% of these women always washed hands before eating food, of which 31% washed with soap. [8]

Proper wash practices reflect the health status of the community.they form the pivotal point of the Swaccha Bharat and Swastha Bharat coherently and cohesively to the health of the nation. Guntur,being nearer to the newly formed capital city of Andhra Pradesh,is showing a tremendous scope for the migration of people thereby increase in the population and new slums hinder the safe water supply and proper sanitation.hence the investigator feels the need for the study on basic sanitation and water supply among the households of Guntur.

II. Aims and objectives

1)To assess the water,sanitation and hygiene practices among households.
2)To assess the knowledge on the importance of safe water supply and basic sanitation facilities in the prevention of communicable diseases like acute respiratory infections and acute diarrhoeal diseases.

III. Materials and Methods

A cross sectional study was conducted among the residents of Mallikarjunapet,Guntur in March 2019 to May 2019.A sample size of 100 was taken using $\boldsymbol{n = \frac{4p(1-p)}{l^2}}$;p = 71%,1- p=29%,l =10
N = 82 rounded off to **100** households.(prevalence was taken from a study by Yerpude PN et al.[9]
Sampling was done by simple random technique using lottery method. A pre tested semi structured questionnaire was used to interview the subjects. All the study subjects who are willing are included in the study. Those who are unwilling and are not available on three consecutive visits are excluded from the study. Verbal consent was taken from the study subjects assuring them the anonymity and confidentiality about the information.

Independent study variables were age,residence (rural/urban), religion (hindu/muslim/christian), caste (general/SC/ST/OBC),literacy status of study subjects (illiterate/non-formal/primary/secondary/higher secondary and above), occupation of study subject (unemployed/working), type of family (nuclear/joint), socioeconomic class and dependent variable was water,sanitation hygiene & hand washing practices. Data collected was analysed using SPSS version 20 and presented through appropriate tables and diagrams as percentages.

IV. Results

Tab.1. Sociodemographic profile of the study subjects

Variable	Characters	Percentage(N=100)
Age group(years)	<25 25 – 44 45 – 65 >65	5 45 46 4
Education	Illiterate Non formal Primary Secondary Higher secondary & above	33 10 9 8 40
Occupation	Homemaker Employed	93 7
Socioeconomic class(Modified BG Prasad scale 2018)	I (6574 & above) II (3287 – 6573) III (1972 – 3286) IV (986 – 1971) V (<986)	6 7 42 33 12

All of the subjects were females and most of them were married. About 45 % are between age 25 – 44year and 46 % are between age 45 – 65.33 % study subjects are illiterate while 40 % have higher secondary education and above.93 % subjects are homemakers.42 % belong to middle category of social class according to Modified B G Prasad Scale of socioeconomic status.

Tab.2. Drinking water facilities and purification methods

Variable	Character	Percentage(n=100)
Main source of drinking water	Borewell Piped water supply Mineral water cans	1 76 23
Queing time for drinking water	<10 mins 10 to 20 mins >20 mins	83 13 4
Frequency of cleaning containers	Daily Once in a week Once in 10 days	61 37 2
Purification method at household level	No purification Filtration Boiling Reverse osmosis	54 26 16 4

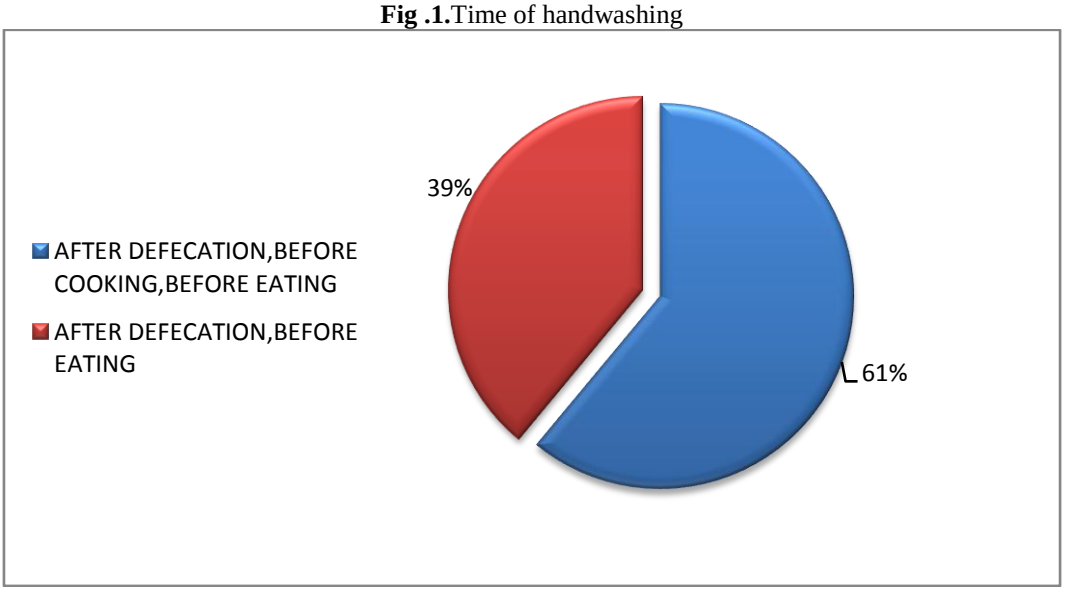
In this study about 76 % households have piped water supply,23 % use mineral water cans and 1 % have borewell for drinking water.83 % households have to wait for less than 10 minutes for drinking water access,13 % for 10 to 20 minutes and 4 % households wait for more than 20 minutes.61 % households clean their containers daily,37 % clean more than once in a week and 2% clean once in 10 days.

Tab.2. Sanitation facilities and practices among households.

Variable	**Character**	**Percentage(N = 100)**
Sanitary latrine in household	Owned Common Absent	79 16 5
Defecation practice	Open defecation Sanitary latrine	13 87
Disposal of solid waste	Open disposal Municipality service	9 91

Regarding sanitation practices among study subjects,79 % subjects own a sanitary latrine,16 % have common latrine and 5 % have no sanitary latrine.87 % subjects use sanitary latrine and 13 % practice open defecation.91% subjects dispose their solid waste using municipality service and 9 % dispose openly.

Fig .1. Time of handwashing



61 % of subjects wash their hands after defecation, before cooking and before eating.39 % subjects wash their hands only after defecation and before eating.74 % of study subjects wash their hands using soap and water and 26 % use only water for washing their hands

51 % of study subjects wash their hands for prevention of diseases and 49 % practice hand washing for cleanliness.

Fig.2 . Material used for hand washing

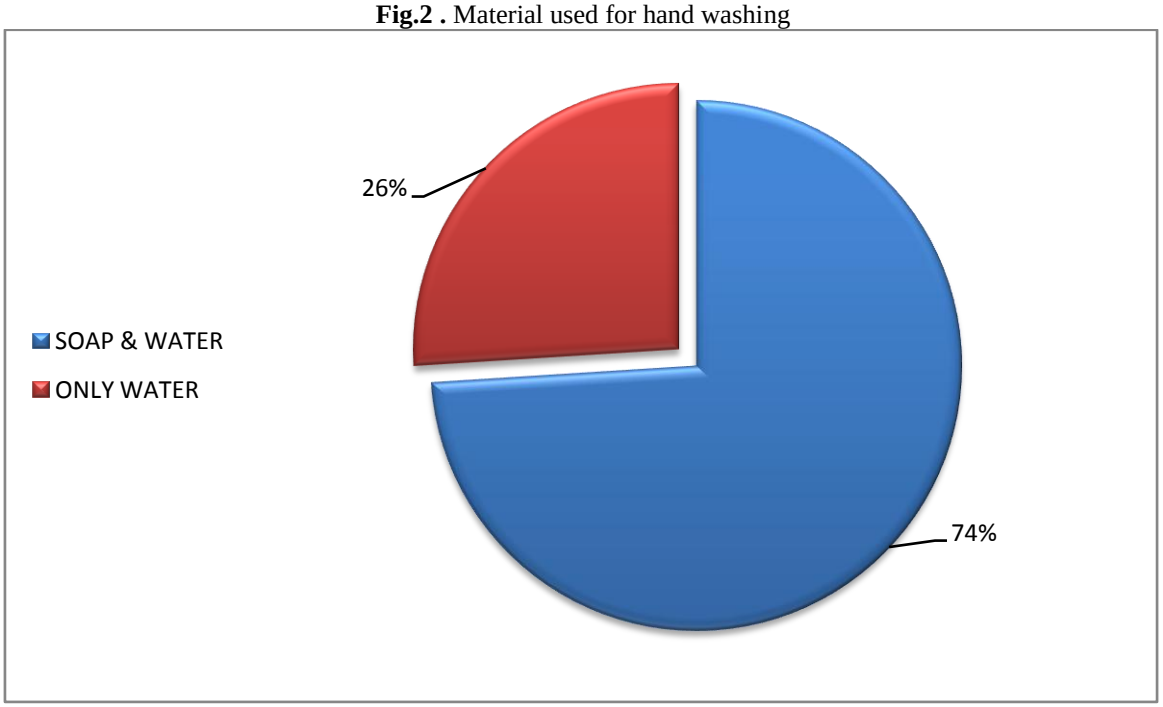
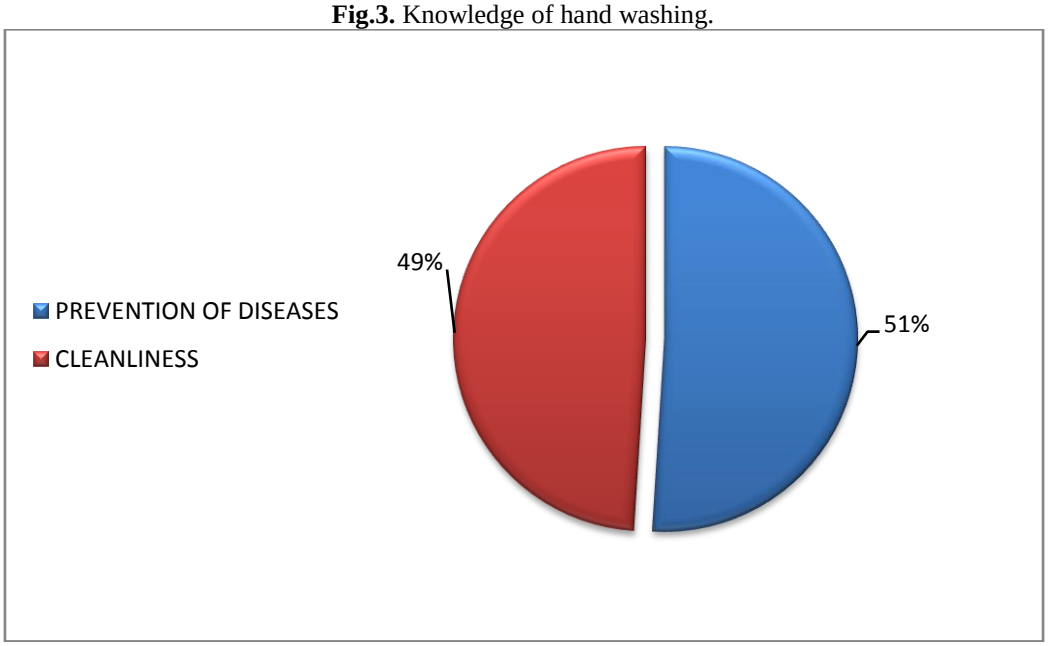


Fig.3. Knowledge of hand washing.



V. Discussion

Safe drinking water facilities and proper sanitation and hand washing practices are essential for prevention of many communicable diseases like acute diarrhoeal diseases,acute respiratory diseases etc especially in developing countries like India. A similar study was conducted in Kolkata among the mothers of under five children attending immunization clinic. The study revealed majority of the participants were in the age group of 20-29 years, Hindus, reserved category, from nuclear families & social class III or below, homemakers and educated upto primary level & above .[10]

In this study conducted, all of the subjects are females and most of them are between the age of 25 – 65 years.93 % of them are homemakers and 7 % are employed. Regarding their educational status , about 33 % are illiterate, 40 % have higher secondary and above education. Most of them are hindus and belong to the category of backward classes.

In our study it was observed that about 76 % households have piped water supply,23 % use mineral water cans and 1 % have borewell for drinking water. Kuberan A et al reported major sources of water procurement in Chennai, India were public tap/stand pipe (42%), half of the participants (53%) having intermittent supply of water & majority of them (81%) required <5 min for fetching water from the water outlet .[11]

Similarly in Chennai study, 75% of study participants stored drinking water in wide mouth closed container and most of them cleaned water container daily (70%) [11].In this study, 83 % households have to wait for less than 10 minutes for drinking water access,13 % for 10 to 20 minutes and 4 % households wait for more than 20 minutes.61 % households clean their containers daily,37 % clean more than once in a week and 2% clean once in 10 days.

According to National Family Health Survey (NFHS-3) report, in India approximately 72.7 per cent of the rural population does not use any method of water disinfection .[12]

On the contrary the commonest form of disinfection in Vellore study found was single-point chlorination, using bleaching powder .[13]

In a rural area of Chennai 45% of the participants were not following any methods of water treatment.[11] A Knowledge, Attitudes and Practices (KAP) study addressing water, sanitation and hygiene in a village of Caribbean island of West Indies found that 70.6% of households engaged in some form of water treatment, principally by boiling .[14]

79% of the households own a sanitary latrine while 61% wash their hands properly.but still 13% follow open defecation and 9% follow open disposal of waste.Almost similar findings were observed in a study conducted in Dr.Maumita de et al(2016) .[10]

In present study nearly 74% wash their hands with soap and water in contrast to study conducted in Aithal KS et al(2014) where 17% of the participants use plain water or ash with water for hand wash.[15] In present study,nearly 51% participants wash their hands for prevention of diseases and rest for cleanliness while in a study done by Kuberan A et al(2015),96% participants wash their hands for prevention of diseases .[11]

VI. Conclusion & Recommendation

From the above results,it is concluded that still there are some households who practice open defecation and live in poor hygienic conditions like improper water storage and purification,open disposal of waste and no proper handwashing. There is still a need for emphasis on proper health education regarding prevention of communicable diseases through proper water,sanitation and hygiene practices.

Intensified health education activities at individual and community level are needed. Coordination of health and water, sanitation, hygiene activities at each level should be emphasized upon. Continuous survey on the basic sanitation and water supply will be useful to achieve best results.

Limitations:

1. This study under taken only in one study setting.
2. Investigative studies should be done at different places to make it universal.
3. Longitudinal studies must be carried out in different local settings in India.

Acknowledgements

I am grateful it my study subjects who participated in the study to carry out this research work.

References

[1]. *https://www.unicef.org/wash/* (accessed on internet on 10/11/2018)
[2]. https://www.unicef.org/wash/3942_91538.html (accessed on 10/11/2018)
[3]. UNICEF WASH strategy 2006 - 2015. Available from *www.unicef.org/about/execboard/files/06-6_wash_final_ods.pdf* (accessed on internet on 10/11/2018)
[4]. https://www.who.int/water_sanitation_health/publications/wash-and-ntd-strategy/en/ (accessed on 10/11/2018)
[5]. https://www.cdc.gov/healthywater/global/index.html (accessed on 10/11/2018)
[6]. *https://www.usaid.gov/india/water-and-sanitation* (accessed on 10/11/2018)
[7]. Freeman MC, Clasen T, Brooker SJ, Akoko DO & Rheingans R. (2013) The impact of a school-based hygiene, water quality and sanitation intervention on soil-transmitted helminth reinfection: a cluster randomized trial. The American Journal of Tropical Medicine and Hygiene. 2013; 89: 875–83
[8]. Esrey SA, Potash JB, Roberts L, and Shiff C. 1991. Effects of improved water supply and sanitation on ascariasis, diarrhoea,dracunculiasis, hookworm infection, schistosomiasis, and trachoma. Bulletin of the World Health Organization 1991;69(5): 609-21.

[9]. Yerpude PN, Jogdand KS, Sumra NA. A cross-sectional study on hand washing practices among mothers in an urban slum area. International journal of health sciences & research. Oct 2014; 4(10): 1-5
[10]. De M, Taraphdar P. A Study on Water Sanitation Hygiene & Hand Washing Practices among Mothers Of Under 5 Children Attending Tertiary Care Hospital In Kolkata , India. 2016;15(7):54–9.
[11]. Kuberan A, Singh AK, Kasav JB, Prasad S, Surapaneni KM, Upadhyay V, Joshi A.Water and sanitation hygiene knowledge,attitude, and practices among household members living in rural setting of India. J Nat Sci Biol Med. 2015 Aug; 6(Suppl 1): 69–74.
[12]. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3), 2005-06:India: Volume I, Mumbai: IIPS; 2007.
[13]. Gopal S, Sarkar R, Banda K, Govindarajan J, Harijan BB, Jeyakumar MB, et al. Study of water supply and sanitation practices in India using geographic information systems: Some design and other considerations in a village setting. Indian J Med Res. March 2009; 129: 233-41.
[14]. Montoute MC, Cashman A. A knowledge, attitudes and practices study on water, sanitation and hygiene in Anse La Raye Village,Saint Lucia. Cave Hill Campus, Barbados : Centre for Resource Management and Environmental Studies (CERMES), The University of the WestIndies;2015.
[15]. Aithal KS, Ogorchukwu MJ, Prabhu V, Shriyan P, Yadav UN. Hand washing knowledge and practice among mothers of under-five children in coastal Karnataka, India – a cross sectional study. Int J med health sci. Oct 2014; 3(4): 266-71.

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