



A CORRELATION STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING WATER BORNE DISEASES AND ITS PREVENTION AMONG MOTHERS WITH A VIEW TO CONDUCT A HEALTH EDUCATION PROGRAMME AT SELECTED PHC OF GURGAON.

Ms. Sheuli Sen

Professor in Pediatric Department, Amity College of Nursing, Amity University, Gurgaon, Haryana

ABSTRACT: The purpose of the study was to assess the knowledge & practice regarding water borne diseases. The research approach adopted for this study was descriptive survey and research design was correlation in nature. A descriptive design was used to assess the knowledge and practice regarding water borne diseases and its prevention. The sample consisted of 300 mothers of under five children. Purposive sampling technique was used for the selection of samples. The instrument for the data collection was a structured interview schedule & self – expressed rating scale. Data gathered were analyzed and interpreted in the light of objectives & hypotheses using descriptive & inferential statistics. The result showed that out of 300 respondents 82(27%) of mothers are in age group of 18-24 years who were having under five children, 244(81%) belong to Hindu religion , 62(21%) middle education, 98(33%) were not working, 171(57%) belong to nuclear family & 90(30%) having family income per month Rs 10,001 – 15,000/. Regarding the assessment of knowledge & practice score, mean knowledge score was 10.97 & mean practice score was 31.27. the score showed that 160 (53.33%) were having poor knowledge but practice score indicated was 282 (94%) were having good practice. The correlational between knowledge & practice scores showed not significant. Findings related to association of knowledge with selected demographic variables that had significant association with education at 0.05 level of significance. Findings related to association of practice with selected demographic variables showed that it had significant association with type of family & family income at 0.05 level of significance. From the data collected & analysis it can be concluded that there exists poor knowledge deficit on water borne disease & its prevention but good practices were found amongst the mothers. So to update & improve their awareness regarding the water borne disease & its prevention, an health education programmed was planned & organized.

Keywords: *Knowledge, Practice, Water Borne Diseases, Prevention, Mothers, Health Education Programme , PHC*



BACKGROIUND OF THE STUDY:

Waterborne diseases are caused by pathogenic microorganisms that most commonly are transmitted in contaminated fresh water. Infection commonly results during bathing, washing, drinking, in the preparation of food, or the consumption of food thus infected. According to the World Health Organization, such diseases account for an estimated 4.1% of the total disability adjusted life year global burden of diseases, & cause about 1.8 million human deaths annually. The World Health Organization estimates that 88% of that burden is attributable to unsafe water supply, sanitation & hygiene. Diarrhea is a leading killer of children, accounting for 9% of all deaths among children under age 5 worldwide in 2015. It is spread by contact with water containing multiple viruses & unfortunately, most supplies are contaminated from sewage & agricultural runoff, as the country's rapidly expanding population puts more & more pressure on natural resources. Cholera is the next disease in the list among the water borne disease, which can happen to both children & adults occurring when a person ingest water that is infected with *Vibrio cholera*. Approximately 1.3 to 4.0 million cases of cholera, & 21 000 to 143 000 deaths worldwide due to cholera. Typhoid fever is a systematic infection caused by *Salmonella enteric serotype Typhi*. According to the most recent estimates (published in 2014), approximately 21 million cases & 222 000 typhoid- related deaths occur annually worldwide. To improve the economic progress of developing countries, water contamination & spread of infectious diseases must be handled. This is achieved through waste & sewage water treatment & education on personal & food hygiene.

NEED OF THE STUDY:

On an average, episodes of diarrhea occur more than twice a year among the children. These diseases are commonly reported in low-income countries as provision of safe water, sanitation & hygiene is sub-optimal. Recent research also shows that due to climate change waterborne diseases are well –known public health problem. The global use of improved eater sources is up to 87% but still 884 million people don't have access to safe drinking water. Today, only 61% of global population uses improved sanitation facilities, which leaves out 2.6 billion people. The awareness of mothers about waterborne disease & preventive services is a barometer by which we can measure the progress of family & community. Lack of awareness can lead to health hazards in country. If no action is taken to address unmet basic human needs for water , as many as 135 million people will die from these diseases by 2020. Even if the explicit Millennium Goals announced by the United Nations in 2000 are achieved – unlikely given current international commitments – between 34 & 76 million people will perish from water related diseases by 2020.

PURPOSE OF THE STUDY:

The purpose of the study was to assess the knowledge & practice regarding water borne disease and its prevention among mothers of under five children & to deliver a health education programe.



OBJECTIVES OF THE STUDY:

- i. To assess the level of knowledge among mothers regarding waterborne diseases and its prevention in selected PHC.
- ii. To assess the level of practice among mothers regarding waterborne diseases and its prevention in selected PHC.
- iii. To determine the relationship between knowledge scores & practice scores of mothers regarding waterborne diseases & its prevention.
- iv. To determine the association of the mean knowledge score regarding waterborne diseases and its prevention with selected demographic variables among mothers in selected PHC.
- v. To determine the association of the mean practice score regarding waterborne diseases and its prevention with selected demographic variables among mothers in selected PHC.
- vi. To prepare a health education program on waterborne disease and its prevention.

DELIMITATION:

Mothers from rural community who were attending the MCH clinic and having children up to 5 years of age.

CONCEPTUAL FRAMEWORK:

The conceptual framework of the present study was based on the Self care deficit theory of nursing given by Dorothea E.Orem.

METHODOLOGY

REAEACH APPROACH:

The research approach selected for this study was Descriptive survey approach.

RESEARCH DESIGN:

The research design selected for this study was Correlation design.

VARIABLES:

Independent variable - In this present study, the independent variable was the Health Education Program on waterborne disease and its prevention.

Dependent variable – In this present study, the dependent variable was the knowledge and practice of mothers of under five children regarding waterborne diseases and its prevention.

SETTING:

In this present study, setting was PHC clinic in rural community at Garihasaru & Budhera .

Population: In the present study the population was the mothers of under five children of Gurgaon.

SAMPLE:

The sample of the present study consisted of mothers who had children of age 5 years & below, in a selected PHC.

SAMPLING TECHNIQUE:

For the present study, the Purposive sampling technique was used for selecting the mothers of under five children.

SAMPLE SIZE:

In the present study the sample size was 300 mothers of under five children.

CRITERIA FOR THE SELECTION OF SAMPLES:

Inclusion criteria-

- i. Mothers who were attending PHC or MHC clinic in rural area at the timing of data collection.
- ii. Mothers who had under five children.
- iii. Mothers who were willing to participate & available during data collection.
- iv. Mothers who could understand Hindi.

Exclusion criteria –

- i. Mothers who had already been exposed to education on waterborne diseases.
- ii. Mothers who had hearing problem.
- iii. Mothers who had any psychiatric problems or sensory impairment.

DATA COLLECTION TOOLS AND TECHNIQUES

S.NO	TOOL	PURPOSE	DATA COLLECTION TECHNIQUE
1	Structured Interview Schedule		
A.	Demographic data	To collect the demographic data.	Interviewing
B.	Structured knowledge Interview Schedule	To assess the knowledge of mothers regarding water borne disease.	Interviewing
2	Self-expressed Rating scale	To assess the practice of water borne diseases & its prevention.	Interviewing

Following steps were taken in development of the tool

- i. An extensive review of research & non-research literature & opinion of experts.
- ii. Development of criteria rating scale for validation of the structured knowledge interview schedule.
- iii. Development of the instrument.
- iv. Assessing the content validity.
- v. Try-out of the tool.
- vi. Reliability of the tool.

Description of the structured interview schedule

Part A: It consists of questions to collect baseline data, regarding socio demographic variables of mother of under five children such as Age, Religion, Education, Occupation, Type of family & Family income.

Part B: It includes structured questions for collection of information regarding knowledge of mothers of under five children about water borne disease. It includes 30 multiple choice questions.

The scoring interpretation of the level of knowledge of mother related to water borne diseases & its prevention are as follows:

SCOREA	LEVEL OF KNOWLEDGE
1-10	POOR
11-20	AVERAGE
21-30	GOOD

Part C: It includes self-expressed rating scale which was used to collect data regarding practice aspect, it include 20 questions regarding water borne disease prevention among the mothers of under five children.

SCOREA	LEVEL OF KNOWLEDGE
1-13	POOR
14-26	AVERAGE
27-40	GOOD

RELIABILITY

The reliability of structured knowledge interview schedule was tested with split half method & result showed 0.85. The reliability of Self-expressed rating scale was tested with split-half spearman brown proficient formula & result showed 0.82. The tools were found to be reliable.

DEVELOPMENT OF HEALTH EDUCATION PROGRAM:

Health education program was prepared for mothers regarding water borne diseases & its prevention. The program was prepared for the duration of 30-40 minutes including various A/V aids (chart, flashcard). It has consisted of the following area:

- i. Water borne disease – introduction, definition, cause, mode of transmission, types, treatment & prevention.
- ii. Diarrhea – Definition, causes, sign symptoms, treatment & prevention.
- iii. Cholera - Definition, causes, sign symptoms, treatment & prevention.
- iv. Typhoid fever - Definition, causes, sign symptoms, treatment & prevention.

DATA COLLECTION PROCEDURE:

Administrative permission was obtained from concerned authority of the selected Primary Health Centre, Gurgaon to conduct the final research study. Data was collected from April to May, 2016. Purpose of the study was explained. Written consent was taken & the confidentiality of their responses was assured. The purposive sampling technique was used to select the members of under five children. Collected the data from mothers after that health education programme was conducted on the same day by the researcher.

DATA ANALYSIS AND INTERPRETATION:

Section-1: Findings related to description of sample characteristic by using frequency & percentage distribution.

FINDINGS RELATED TO DESCRIPTION OF SAMPLE CHARACTERISTICS BY USING FREQUENCY AND PERCENTAGE DISTRIBUTION

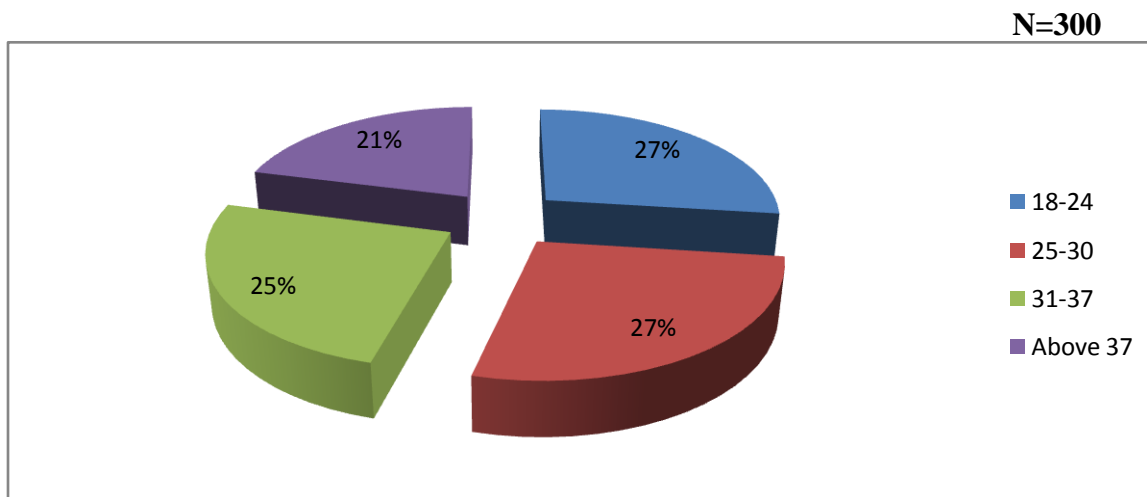


Fig 1: Pie diagram showing the Age of Mothers of Under five children

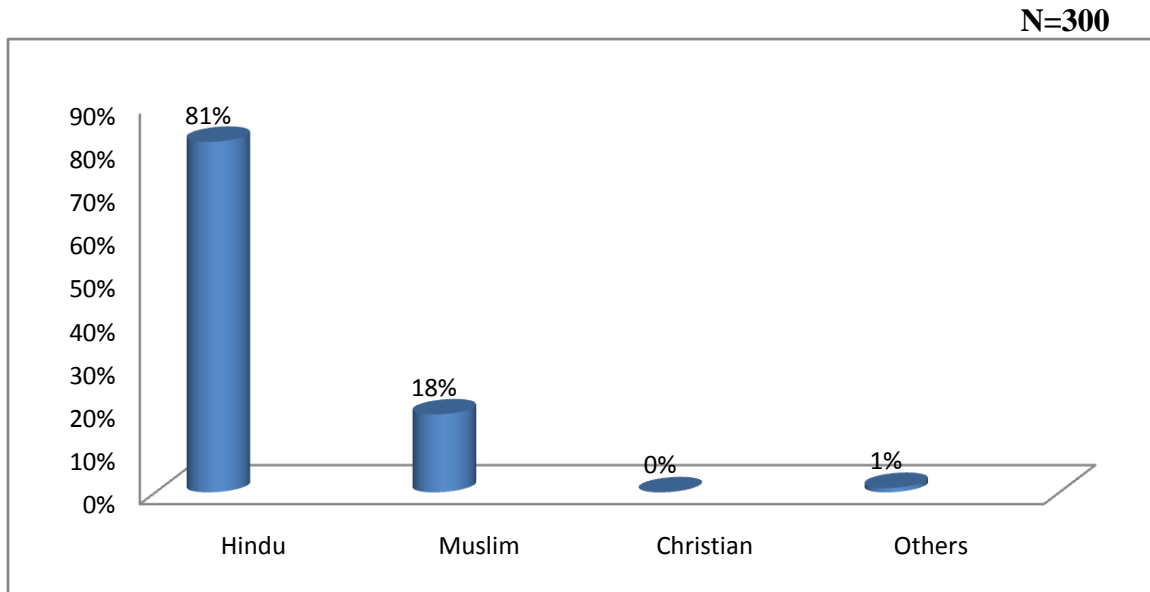


Fig 2: Bar diagram showing the Religion of Mothers

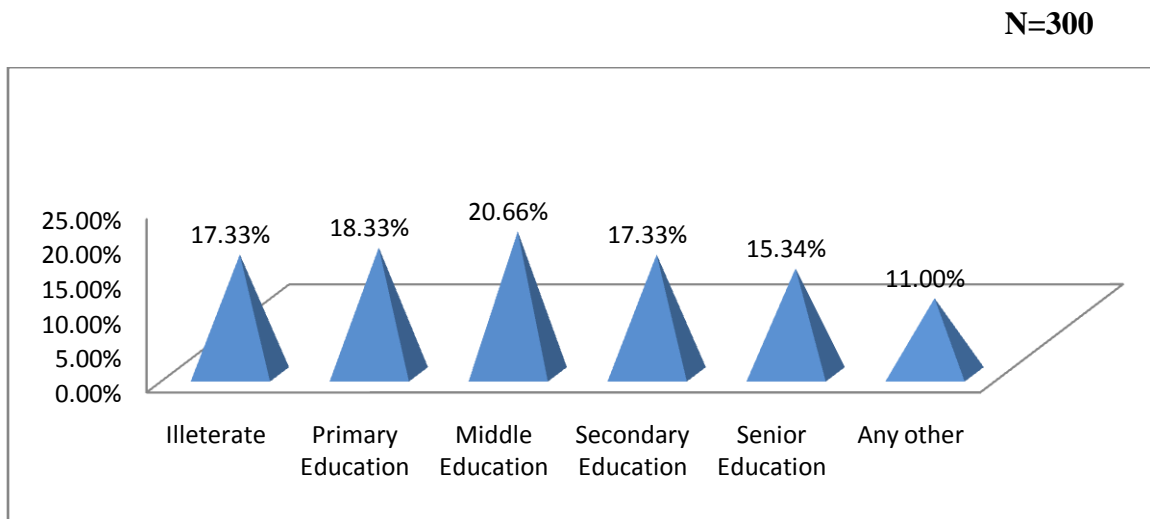


Fig 3: Cone diagram showing the education of Mothers

N=300

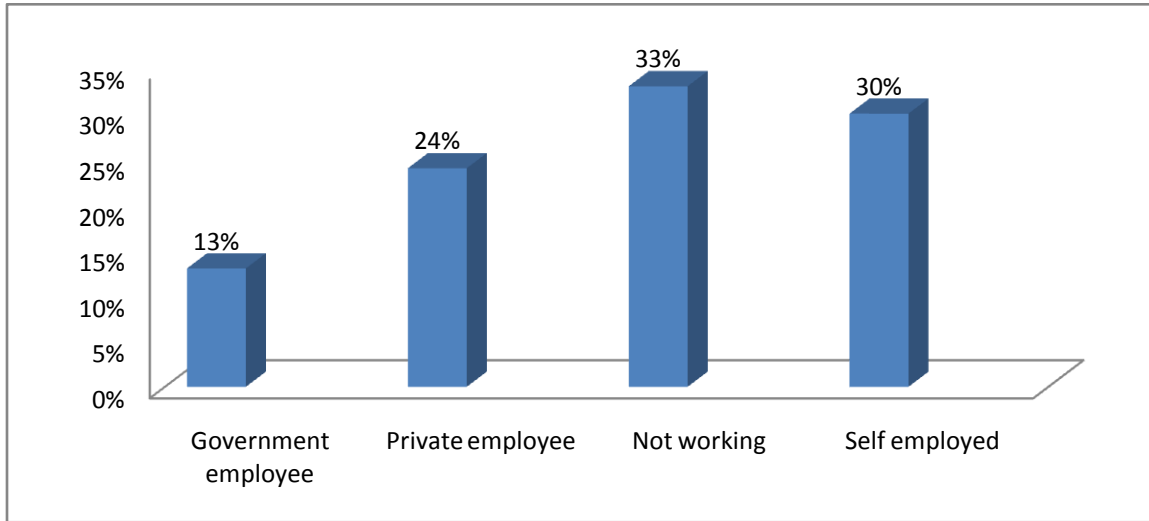


Fig 4: Bar diagram showing the occupation of Mothers

N=300

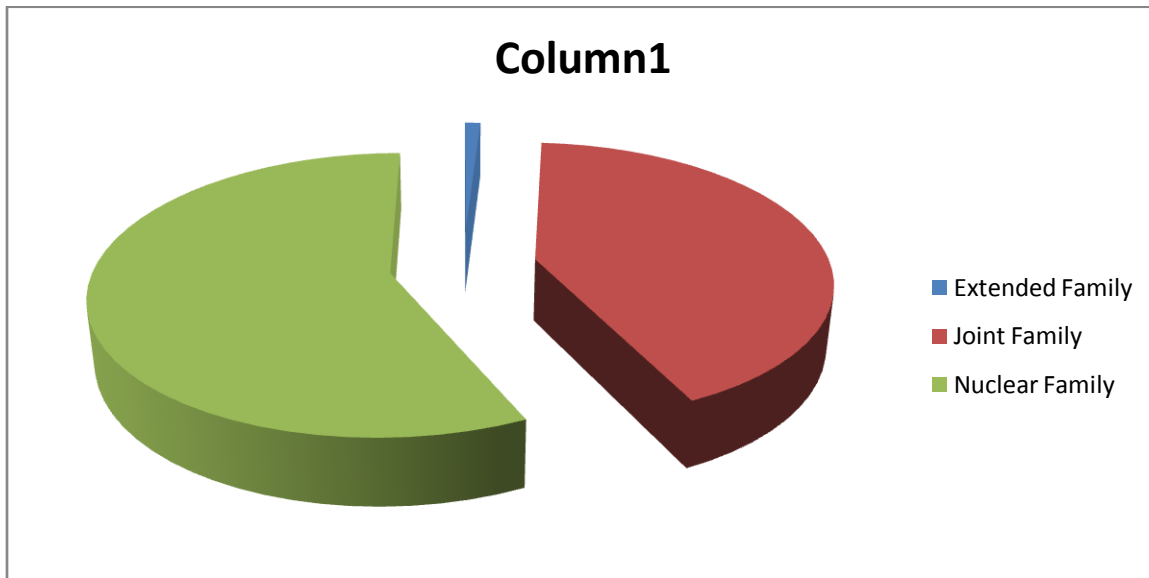


Fig 5: Pie diagram showing the type of family of Mothers

N= 300

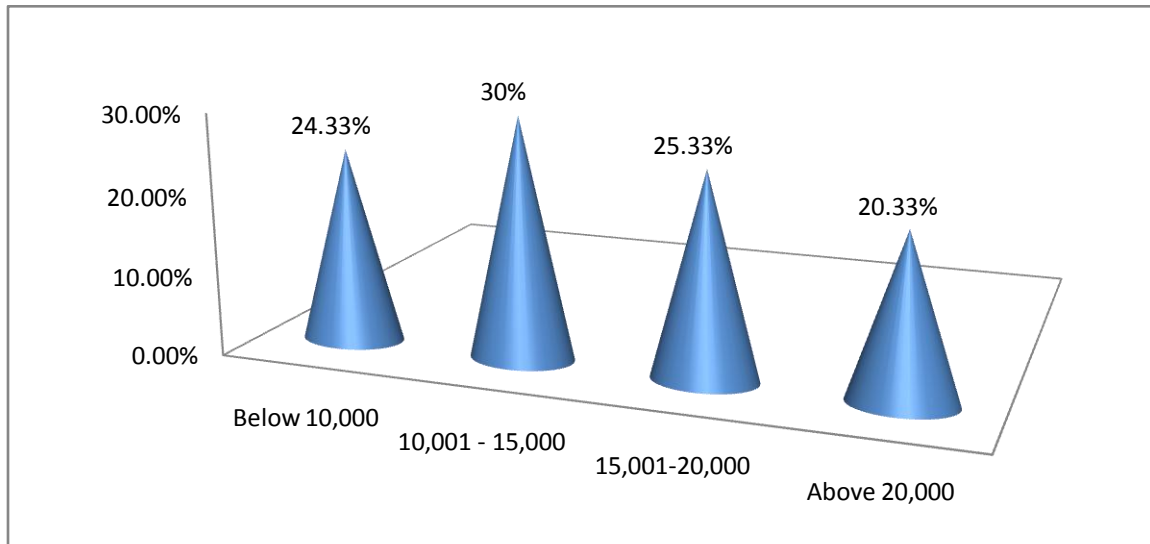


Fig 6: Bar diagram showing the family income of Mothers

SECTION – 2

FINDINGS RELATED TO ASSESSMENT OF THE KNOWLEDGE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING WATER BORNE DISEASES AND ITS PREVENTION THROUGH STRUCTURED INTERVIEW SCHEDULE

Table 1: Mean and Standard deviation of knowledge scores of mothers of under five children regarding water borne diseases and its prevention.

N=300

Knowledge Scores	Range of Score		Mean	Standard Deviation
	Minimum Score	Maximum Score		
	5	23	10.97	3.76

Table 2: Frequency and percentage distribution of knowledge scores of mothers of under five children.

N=300

Levels	Frequency of knowledge scores	Percentage of knowledge scores (%)
Poor	160	53.33
Average	136	45.33
Good	4	1.34

SECTION -3

FINDINGS RELATED TO ASSESSMENT OF THE EXPRESSED PRACTICE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING PREVENTION OF WATER BORNE DISEASES THROUGH SELF-EXPRESSED PRACTICE RATING SCALE

Table 3: Mean and Standard deviation of expressed practice scores of mothers regarding prevention of water borne disease.

N=300

Expressed Practice Scores	Range of Score		Mean	Standard Deviation
	Minimum Score	Maximum Score		
	24	38		

Table 4: Frequency and percentage distribution of practice scores of mothers of under five children.

N=300

Levels	Frequency of knowledge scores	Percentage of knowledge scores (%)
Poor	0	0
Average	18	6
Good	282	94

SECTION 4



FINDINGS RELATED TO KARL PEARSON CO EFFICIENT OF CORRELATION BETWEEN KNOWLEDGE AND SELF-EXPRESSED PRACTICE SCORES OF MOTHERS

Table 5: Coefficient of correlation showing the relationship between knowledge and expressed practices of mothers

N = 300

Variables	Mean	S.D	Calculated value “r”	Table value “r”
Knowledge	10.97	3.76	0.067	0.095
Practice	31.27	2.73		

“r” (298)= 0.095, Not significant

SECTION -5

FINDING RELATED TO ASSOCIATION OF KNOWLEDGE WITH SELECTED DEMOGRAPHIC VARIABLES WATER BORNE DISEASE AND ITS PREVENTION AMONG THE MOTHERS OF UNDER FIVE CHILDREN

Table 6: Chi square value showing association of knowledge scores with selected demographic variables.

N=300

S.N	Demographic Characteristics	Frequency		Degree of Freedom (df)	Chi square (Calculated value)	Chi square (Table value)
		Above Median (n)	Below Median (n)			
1	Age of mother (in years)			3	3.15	7.81
	a. 18-24	40	43			
	b. 25-30	42	39			
	c. 31-37	31	45			
	d. Above 37	26	34			
2	Religion			2	1.21	5.99
	a. Hindu	133	111			
	b. Muslim	28	26			
	c. Any other	0	2			
3	Education			5	18.15*	11.07
	a. Illiterate	16	36			
	b. Primary Education	17	38			
	c. Middle Education	30	32			



	d. Secondary Education	29	23			
	e. Senior Secondary	26	20			
	f. Any other	21	12			
4	Occupation			3	4.26	7.81
	a. Government Employee	24	14			
	b. Private Employee	34	38			
	c. Not working	40	58			
	d. Self employed	41	51			
5	Type of Family			2	1.41	5.99
	a. Nuclear	83	88			
	b. Joint	54	72			
	c. Extended	02	61			
6	Family income per month in Rupees			3	3.87	7.81
	a. Less than 10,000/-	28	44			
	b. 10,000 -15,000/-	41	50			
	c. 15,000-20,000/-	37	39			
	d. Above 20,000/-	33	28			

*significant at 0.05 level.

SECTION -6

FINDING RELATED TO ASSOCIATION OF PRACTICE WITH SELECTED DEMOGRAPHIC VARIABLES WATER BORNE DISEASE AND ITS PREVENTION AMONG THE MOTHERS OF UNDER FIVE CHILDREN

Table 7: Chi square value showing association of knowledge scores with selected demographic variables.

N=300

S.N	Demographic Characteristics	Frequency		Degree of Freedom (df)	Chi square (Calculate d value)	Chi square (Table value)
		Above Median (n)	Below Median (n)			
1	Age of mother (in years)			3	1.56	7.81
	e. 18-24	40	42			
	f. 25-30	37	44			
	g. 31-37	42	34			
	h. Above 37	32	29			
2	Religion			2	0.28	5.99
	d. Hindu	121	123			



	e. Muslim	29	25			
	f. Any other	1	1			
3	Education			5	4.66	11.07
	g. Illiterate	26	26			
	h. Primary Education	21	34			
	i. Middle Education	35	27			
	j. Secondary Education	26	26			
	k. Senior Secondary	25	21			
	l. Any other	18	15			
4	Occupation			3	3.6	7.81
	e. Government Employee	17	21			
	f. Private Employee	42	30			
	g. Not working	44	54			
	h. Self employed	48	44			
5	Type of Family			2	11.07*	5.99
	d. Nuclear	99	72			
	e. Joint	52	74			
	f. Extended	0	3			
6	Family income per month in Rupees			3	10.53*	7.81
	e. Less than 10,000/-	41	33			
	f. 10,000 -15,000/-	33	56			
	g. 15,000-20,000/-	39	37			
	h. Above 20,000/-	38	23			

*significant at 0.05 level.

SUMMARY OF MAJOR FINDINGS

SECTION I - This section represents findings related to description of sample characteristics by using frequency & percentage distribution.

- i. Age indicates that highest number of mothers 82(27%) were in age group of 18-24 years, 81(27%) were in the age group of 25-30 years, 75(25%) were in age group of 31-37 years & remaining 62(21%) were in age group of above 37 years.
- ii. Most of the mothers 244(81%) belonged to Hindu religion.
- iii. Education status indicated that highest number of mothers 62(20.66%) had middle education, 55(18.33%) had primary education, 52(17.33%) were illiterate, 52(17.33%) had secondary education, 46(15.33%) had senior secondary education & 33(11%) in any other category.



- iv. Occupation indicated that highest percentage of mothers 98(33%) were not working, 92(30%) were self- employed, 72(24%) were private, 38(13%) were government employee.
- v. Type of family indicated that highest percentage of mothers 171(57%) belonged to nuclear family, 126(42%) belonged to joint family & 3(1%) belonged to extended family.
- vi. Family income indicated that highest percentage of mothers 90(30%) has Rs 10,001-15,000/-per month, 76(25.33%) had Rs 15,001-20,000/- per month, 73(24.33%) less than 10,000/- per month & 61(20.33%) above 20,000/- per month.

SECTION II – This section represents the findings related to assessment of the knowledge of mothers of under five children regarding water borne diseases & its prevention through structured interview schedule. Assessment of knowledge among mothers in terms of water borne disease & its prevention. They were having Poor knowledge score.

SECTION III – This section represents the findings related to assessment of the expressed practice of mothers of under five children regarding prevention of water borne diseases through self-expressed practice rating scale. Assessment of Practice among mothers in terms of water borne diseases & its prevention showed good practice score.

SECTION IV – This section represents the findings related to Co efficient of Correlation between knowledge & practice scores of mothers of under five children regarding water borne diseases & its prevention, which was represented as “r” value. The calculated value was $r=0.067^*$ at the level $P=0.05$ level of significance where as the table value was 0.095 which showed that there was no relationship between knowledge scores & practice scores.

SECTION V- Findings related to association of knowledge scores with selected demographic variables among the mothers of under five children. Association of knowledge score with education of mothers ($\chi^2= 18.15$) was statistically significant at 0.05 level of significance. On computation, it was also found that there was no significant association between knowledge score of mothers with variables like their age, religion, occupation, type of family, family income obtained by the Chi-square value which was less than the table value of chi-square at 0.05 level of significance.

SECTION VI- Findings related to association of Practice scores with selected demographic variables among the mothers of under five children. Association of Practice score with education of mothers ($\chi^2= 18.15$) was statistically significant at 0.05 level of significance. On computation, it was also found that there was no significant association between knowledge score of mothers with variables like their age, religion, education & occupation obtained by the Chi-square value which was less than the table value of chi-square at 0.05 level of significance.



CONCLUSION:

The following conclusion was drawn from the findings of the study:

- i. Mothers were having deficit in knowledge regarding water borne disease & its prevention.
- ii. Good practice was found regarding water borne disease & its prevention among mothers of under five children.
- iii. There was no correlation between knowledge scores & practice scores.
- iv. There was a significant association of knowledge scores with educational status & no significant association with variables like age, religion, occupation, type of family & family income per month of mothers.
- v. There was a significant association of practice scores with type of family & family income per month of mothers & no significant association with variables like age, religion, educational & occupation.
- vi. Prepared & administered the health education program on water borne diseases & its prevention.

LIMITATIONS:

The tool used for soliciting knowledge was structured. This restricted free & frank responses of the mothers.

RECOMMENDATIONS:

Keeping in view the findings of the study following recommendations were made:

- i. A similar study can be done with an experimental research approach considering pre-test post-test control group design.
- ii. Comparative study can be conducted in order to compare the knowledge & practice on water borne disease & its prevention
 - Between different states.
 - Between urban & rural area
- iii. A similar study can be conducted to evaluate the effectiveness of planned teaching programme on water borne disease & its prevention.
- iv. A similar study can be conducted in different settings of urban area.

REFERENCES:



BOOKS

1. WHO, International Day of Water Cooperation, About World Water Day, 2013. [Last cited on 2013 Jan 30]. Available from:
http://www.unwater.org/watercooperation2013/about_wwd.html .
2. Nadjmabadi M. Tehran: Tehran University Publishers; 1996. [Last cited 2013 on Jan 30]. History of Medicine in Iran; pp. 120–6. Available from: <http://www.elib.hbi.ir/persian/TRADITIONAL-MEDICINE/HISTORY-OF-MEDICINE-DR-NADJMABADI/NADJM-INDEX-MAIN.htm> .
3. Zoroaster, Avesta, Yasna, Sacred Liturgy and Gathas/Hymns of Zarathushtra. [Last cited on 2013 Jan 30]. Available from: <http://www.avesta.org/yasna/yasna.htm> .
4. Torah, Book 19, the book of Psalms, Chapter 69, Verse 34. Bible suite. [Last cited on 2013 Jan 30]. Available from: <http://biblesuite.com/psalms/96-11.htm> .
5. Quran l-anbiyāa (The Prophets), Chapter 21, Verse 30, Electronic Version. [Last cited 2013 Jan 30]. Available from: <http://corpus.quran.com/translation.jsp?chapter=21&verse=30> .
6. WHO, Water Sanitation Health, Water-related diseases. [Last cited on 2013 Jan 30]. Available from: http://www.who.int/water_sanitation_health/diseases/en/
7. WHO, Water Sanitation Health, Facts and Figures on Water Quality and Health. [Last cited on 2013 Jan 30]. Available from: http://www.who.int/water_sanitation_health/facts_figures/en/index.html .
8. WHO, Health topics, Emerging diseases. [Last cited 2013 Jan 30]. Available from: http://www.who.int/topics/emerging_diseases/en/
9. WHO, Weekly epidemiological record, Cholerae 2011, No. 31-32, 2012, 87, 289-304, 3 Aug, 2012. [Last cited on 2013 Jan 30]. Available from: <http://www.who.int/wer/2012/wer873132/en/index.html> .
10. WHO, Water Sanitation Health, Burden of disease and cost-effectiveness estimates. [Last cited 2013 Jan 30]. Available from: http://www.who.int/water_sanitation_health/diseases/burden/en/index.html .
11. Adame, K. R., Windham, G.C., (2004). Adverse health effect of water borne diseases. *Asian Medical Journal*, 4 (6), 121-122. DOI: 10.1080/09603120506538226
12. Baddam. R., Kumar, N., Thong, K.L., Nagoi, ST., The CS, Yap KP et al. (2012). Outbreak of typhoid fever. *Journal of bacteriology*, 194(13), 3565-6. DOI: 10.1128/jb.00581-12.
13. Banda, K., Sarkam R., Gopal, S., Govindarajan, J., Harijan, B.B., (2007). WATER HAandling, sanitation and defecation practices in rural southern India. *Trans R Soc Trop Med Hyg*, 10(11), 1124-30. DOI: 10.1016/j.trstmh.2007.05.004.