



DELIBERATION AND ACCOMPLISHMENT OF HANDWASHING PRACTICES OF CONSUMERS

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Abstract

The aim of the present study is to examine the deliberation and accomplishment of handwashing practices of consumers. Home interviews of 951 randomly selected consumers representing five districts in southern district of Tamil Nadu. . Awareness of handwashing practice does not induce the respondent to execute the scientific handwashing technique. Handwashing practices of educated and illiterate respondents are the same. Handwashing practice is one of the important factors in personal hygienic practices. Awareness of scientific method of handwashing practices should be created through schools, colleges and primary health centers.

Key words: Food safety, Food Adulteration, and Food poisoning.

Introduction

Handwashing is one of the single most effective means of preventing the spread of bacteria and viruses which cause foodborne illness. Disease causing organisms that cannot be seen can be transferred from unwashed hands to food and food equipment. Proper and frequent handwashing can be one of the most effective controls to limit contamination of food, utensils and equipment. Proper handwashing can also help reduce the spread of bacteria and viruses that cause other illnesses (MCHD 2001)¹. Keeping hands clean through improved hand hygiene is one of the most important steps one can take to avoid getting sick and spreading germs to others. Many diseases and diseases causing conditions are spread by not washing hands with soap and clean running water. Infectious diseases commonly spread through hand to hand contact. It includes common cold and several gastrointestinal disorders, such as diarrhoea. Diarrhoea is a serious global public health problem. It is estimated that 2.2 million people in developing countries most of them children, die annually due to lack of access to safe drinking water, inadequate sanitation and poor hygiene (Water Aid, 2006)²

Materials and Methods

Sample Size

The quantitative data for the study was collected from 951 respondents randomly selected from southern districts of Tamil Nadu. In the field work, the data were collected through a well-structured questionnaire through personal interview mode after obtaining consent from them.

Research Design

The survey analyses the awareness and execution of hand washing practice of respondents during the period of January 2010 to May 2013 as a part of Doctoral research work. The questionnaire was divided into three sections (1) Demographic factor, (2) Awareness and execution of handwashing practices,

Pilot Study

The questionnaire was pre-tested by collecting data from 95 respondents. The questionnaire was revised and restructured based on the results of the pilot study. The final draft was prepared after revising the schedule based on the feedback of the pilot study.

Data Analysis

The collected data was analyzed using the Statistical Package for the Social Science (SPSS) software package version 17. The t test has been used to analyse the awareness and execution of handwashing practices of respondents. F test has been used to explain the respondents' education and the time taken to wash hands. Handwashing practices of respondents in different situation are depicted through factor analysis.

AWARENESS OF HANDWASHING PRACTICES

Handwashing prevents the direct transfer of infectious pathogens on the hands from reaching a portal of entry and the indirect transfer through food preparation and transmission pathways (CDC, 2006)³. Due to lack of awareness, respondents do not follow correct handwashing techniques. Table 1 shows the awareness and execution of handwashing practices of respondents.

Table 1

Execution of handwashing practices

Null hypothesis: Awareness of handwashing practices does not influence the execution of correct handwashing method.

Time taken to wash hands	Handwashing Awareness	N	\bar{X}	σ	t Value	P value
Below 1 Second	Aware	886	2.82	1.867	1.763	.078*
	Unaware	65	2.40	1.861		

2 – 7 Seconds	Aware	886	2.77	1.826	-2.157	.031*
	Unaware	65	3.28	1.949		
8 – 15 Seconds	Aware	886	1.85	1.461	1.670	.095*
	Unaware	65	1.54	1.133		
16- 20 Seconds	Aware	886	1.76	1.388	.983	.326*
	Unaware	65	1.58	1.211		
Above 21 seconds	Aware	886	2.14	1.687	1.412	.158*
	Unaware	65	1.83	1.557		

*Significant at 5% level

Table 1 analyses the awareness and execution of handwashing practices among the respondents. As per the acceptance of null hypotheses ($P > 0.05$), the variables of time taken to wash hands for below 1 second, 8-15 seconds, 16- 20 seconds and above 21seconds are not significantly associated with the awareness of handwashing practices. Awareness of handwashing practice does not induce the respondent to execute the scientific handwashing technique.

In other variable of time taken to wash hands for 2 – 7 seconds, as per the rejection of null hypothesis ($P < 0.05$), there is a significant association between the time taken to wash hands for 2 -7 seconds and awareness of handwashing practices. It is concluded that awareness in handwashing impels the respondents to wash hands for 2 – 7 seconds.

DURATION OF HANDWASHING

The Food Safety Information Council recommends that people should wash their hands under running water using soap for at least 20 seconds, rubbing hands and rinsing and then drying thoroughly for at least 10 seconds with a clean towel or 20 seconds with a hand dryer. Their initial message of washing hands thoroughly was amended to take into account more recent studies about the need to thoroughly dry hands (Patrick et al 1997)⁴. People should wash hands according to the scientific handwashing technique. Table 2 explains the respondents' education and the time taken to wash hands.

Table 2
Education and time taken to wash hands

Null hypothesis: Education has no impact on time taken to wash hands.

Time taken to wash hands	Education	N	\bar{X}	σ	F value	P value
Below 1 Second	College	117	2.80	1.844	4.482	.001*
	High School	326	2.55	1.829		
	Primary School	253	2.75	1.867		
	Read and Write	68	3.47	1.832		

	Illiterate	187	3.03	1.899		
2 – 7 Seconds	College	117	3.26	1.820	3.755	.005*
	High School	326	2.88	1.823		
	Primary School	253	2.76	1.854		
	Read and Write	68	2.29	1.720		
	Illiterate	187	2.63	1.840		
8 – 15 Seconds	College	117	2.17	1.678	3.091	.015*
	High School	326	1.89	1.451		
	Primary School	253	1.65	1.326		
	Read and Write	68	1.63	1.326		
	Illiterate	187	1.81	1.428		
16- 20 Seconds	College	117	2.15	1.647	4.674	.001*
	High School	326	1.82	1.402		
	Primary School	253	1.54	1.190		
	Read and Write	68	1.51	1.215		
	Illiterate	187	1.74	1.383		
Above 21 seconds	College	117	2.44	1.859	5.573	.000*
	High School	326	2.35	1.754		
	Primary School	253	1.78	1.481		
	Read and Write	68	1.96	1.625		
	Illiterate	187	2.01	1.620		

*Significant at 5% level

Table 2 shows the relationship between the educational level of respondents and time taken to wash hands. As the rejection of null hypotheses ($P < 0.05$), the variables of time taken to wash for below 1 second, 2-7 seconds, 8-15 seconds, 16-20 seconds and above 21 seconds are significantly associated with the education of the respondents. It is concluded that the time taken to hand wash is the different for respondents in different educational levels. Handwashing practices of educated and illiterate respondents are the same.

HANDWASHING PRACTICES IN DIFFERENT SITUATIONS

Hand-washing is a simple and effective way to help prevent diseases, such as cold, flu, and food poisoning. Frequent hand-washing is one of the best ways to avoid

getting sick and spreading illness. Hand-washing requires only soap and water or an alcohol-based hand sanitizer — a cleanser that does not require water (Mayo, 2011)⁵. In Table 3 handwashing practices of respondents in different situation are depicted through factor analysis.

Table 3**Handwashing practices - Factor analysis**

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.173	61.726	61.726	6.173	61.726	61.726	4.219	42.187	42.187
2	1.095	10.945	72.671	1.095	10.945	72.671	3.048	30.484	72.671
3	.563	5.627	78.298						
4	.490	4.903	83.201						
5	.363	3.634	86.835						
6	.321	3.205	90.040						
7	.315	3.147	93.187						
8	.254	2.541	95.728						
9	.216	2.165	97.893						
10	.211	2.107	100.000						
Extraction Method: Principal Component Analysis.									

Rotated Component Matrix^a		
	Component	
	1	2
Before & After preparation of food	.213	.846
Before & After consumption of food	.258	.860
After doing works	.390	.796
After visiting toilet	.574	.529
After coughing, and sneezing	.691	.485
After touching sick person	.756	.372
After handling garbage	.763	.388
After handling the pet	.794	.282
After cutting nails	.816	.223
After cleaning child toilet	.836	.163
Extraction Method: Principal Component Analysis.		

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	6754.273
	Df	45
	Sig.	.000

In using Kaiser's criterion, the component Eigen value should be 1 or more in the total variance. In this study, only the first two components recorded Eigen values above 1 (6.173, 1.095). These two components explain a total of 72.671 percent of variance.

To verify whether the dataset is suitable for factor analysis, check the KMO measure of sampling adequacy value is .06 or above and that the Bartlett's Test of sphericity value is significant (the sig. value should be .05 or smaller). In this study, the KMO Value is .920 and Bartlett's test is significant ($P=.000$). Therefore, factor analysis is appropriate.

Factor 1 can be named "**Personal hygienic practices**"

- | | |
|--------------------------------|-------|
| 1. After visiting toilet | 0.574 |
| 2. After coughing and sneezing | 0.691 |
| 3. After touching sick person | 0.756 |
| 4. After handling garbage | 0.763 |
| 5. After handling the pet | 0.794 |
| 6. After cutting nails | 0.816 |
| 7. After cleaning child toilet | 0.836 |

Factor II can be named as "**Hygienic practices at home**".

- | | |
|-----------------------------------------|-------|
| 1. Before and after preparation of food | 0.846 |
| 2. Before and after consumption of food | 0.860 |
| 3. After doing a work | 0.796 |

1. **Personal hygienic practices** is the name given to the first factor and is identified through factor analysis. All these variables had a factor loading of more than 0.05. All these items are in one commonality. Personal hygienic factors include handwashing after visiting toilet and after coughing and sneezing.

In addition to this, handwashing after touching a sick person is considered as the most important factor influencing personal hygiene. Handwashing after handling garbage is considered as the fourth important factor. Further, handwashing after touching the pet, washing hands after cutting the nails and handwashing after cleaning child toilet are also considered as important personal hygienic practices. To avoid food borne diseases, hygienic handwashing practices are very essential. It is concluded that handwashing practice is one of the important factors in personal hygienic practices.

2. Hygienic Practices at Home.

Hygienic practices have emerged as the second factor and it includes washing hands before and after preparation of food, before and after consumption of food and after doing some work. Handwashing is very essential before and after doing a work at home. Respondents can prevent food borne diseases by following appropriate handwashing methods.

In personal hygienic practices, the respondents prefer to wash hands mainly after cleaning child toilet (0.836) and after cutting nails (0.816). In hygienic practices the respondents wash hands before and after preparation of food (0.846) and before and after consumption of food (0.860).

References

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