

# A Survey Report on Hand Hygiene Practices in Gondi Villagers of Western Maharashtra, India: A Statistical Approach

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## Abstract:

**Background:** “Practicing good hygiene” is also a behavioral change – one that everyone can make whether they are rich or poor, young or old, educated or not. Community hygiene education and good hygiene are important tools in preventing infectious diseases from spreading throughout a community.

**Aim & Objective:** To assess the hand hygiene practices and sanitary condition of the Gondi Village.

**Materials & Methods:** The cross sectional study was done in Gondi Village of Satara district. A total of 1200 samples were randomly selected from three wards of Gondi. The data was collected by interview method using interview schedule. Data were entered in Excel sheet and analyzed by using SPSS 20.0 program.

**Results:** The mean age ( $\pm$ SD) was 40.4 ( $\pm$ 27.8) years, the mean ( $\pm$ SD) score of the participant’s hand hygiene practice was 40.7 ( $\pm$ 2.6).

**Conclusion:** In this study it seems that majority of villagers found to be “careless” regarding the theme of the topic.

**Keywords:** Hand hygiene practices, Personal hygiene, Sanitation, Hygiene, Rural area.

## INTRODUCTION:

Hand hygiene is an event for infectious disease control, and advancement of hand hygiene has become one step up measure of community health. [1, 2] Excellent hygiene from a society shall be an easiest way to make an influence on the health condition of villagers. Hygiene is one of the “low-cost”, most “cost-operative” changes from that can be made with directly rewards for quality of life. Same studies in past showed that to take one step for simple action of hands hygiene with soap may reduce or avoid the risk of diarrheal diseases in a community by 47 percent. [3] Sometimes, simple hand washing techniques also a cost effective which helps to minimizing almost 90% of infections. [4] Hand hygiene remains one of the most important strategies in preventing infections in healthcare settings and preventing healthcare associated infections that affect hundreds of millions of individuals worldwide each year leading to significant illnesses, disabilities, prolonged hospital stay and added financial burden to patients, families and the healthcare system. [5, 6] In efforts to prevent such detrimental outcomes and improve patient safety within the healthcare setting, hand hygiene has become the primary area of focus in a wide range of initiatives such as the Centers for Disease Control and Prevention hand hygiene guidelines, and the World Health Organization 5 Moments for Hand Hygiene. [5, 7] In continuation of hygiene education, rates of “safe” hand washing are sub-optimal. Soap scarcity in some households and the prioritization of laundry are barriers to safe practice. Miscellaneousness towards education and its place of start may need to be appropriated towards the setting of improved experiment. [8] For maintaining health Hand Washing with Soap (HWWS) is effective, investing in HWWS is easy and minimal. For school children the

practice is significant, who might suffer from more severe hygiene related diseases as compared to adults. [9] In the home and everyday life setting hand hygiene is central to prevent the spread of infectious diseases [10]. The World Health Organization (WHO) has proposed guidelines for hand hygiene reflected that washing hands with soap and water when it is visibly dirty or soiled with blood or other body fluids or after toilet use. The guidelines endorse washing hands with water and soap or an alcohol-based hand sanitizer. Past studies on the alcohol-based hand rubs show that it has very good efficacy and concentration of alcohol ranges from 62% to 95% thus assuring that they are anti bactericidal. [11, 12] Over the world, 5.3% of deaths and 6.8% of disability happens due to weak sanitation, weak hygiene and water hazard. Approx 2/3<sup>rd</sup> i.e. (67%) of the total population go for open-air defecation and only 1/3<sup>rd</sup> (33%) having access to a latrine. [13]

## Statement of the problem & Objective:

A study to assess the hand hygiene practices among villagers in Gondi.

## MATERIAL AND METHODS:

**Design:** community based cross-sectional study.

**Setting:** - The study was planned to conduct in a selected village by National Service Scheme (NSS) unit of KIMSUDU.

**Study Population:** The present community based cross-sectional study was undertaken during 13<sup>th</sup> -20<sup>th</sup> February 2019 covering 1200 population of Gondi Village of Satara district, Western Maharashtra during National Service Scheme Camp held by Krishna Institute of Medical Sciences “Deemed To Be University”(KIMSUDU), Karad.

**Sampling technique:** - Simple random sampling.

**Inclusion Criteria:** - All participants were willing to participate.

**Data collection:** Data was collected using a pre-designed and pre-tested pro-forma where specially trained medical undergraduates (NSS Volunteers) and paramedical staff under the supervision of a coordinator of NSS camp, collected data by door-to-door survey. Members of family were provided information sheet about the measures of this project. Also, about utility of the survey and verbal consent was obtained in each instance. Those not willing to participate in the study, with speech and hearing impairment were excluded from the study. Head of the family was taken as a unit for study purpose and personally one by one interviewed with basic designed questionnaire, in case if the participant was uneducated then for the quality of data information was collected from the educated family member. Simple randomization technique was used for selecting a family for study the objective. A total of 1200 participants were studied with three wards of that villages considered during study design for non-response/locked. Information regarding socio-demographic characteristics of family members, their knowledge and practice regarding hand hygiene was collected. Hand hygiene practice by members of family was assessed after defecation, before preparing food, before taking meals, before feeding the child, after cleaning child who has just defecated, after urination and after routine work by mothers. However, proper hand washing was defined as hand washing with soap and water after all these critical moments.

**Statistical analysis:** The data were analyzed using SPSS (Statistical packages for social sciences) 20.0, IBM Ltd., INDIA software package to compare data sets chi-square test and independent t-test was used and  $P < 0.05$  was considered statistically significant also frequency

distribution (frequency and percentage) was done by using descriptive analysis.

## RESULTS:

### Descriptive Study of Demographic Variable

A total of 1200 study population from Gondi village participated in the study. Among the total, 60% of the respondents were male and 40% were females. Almost 22.5% respondents were married. The mean age ( $\pm$ SD) was 40.4 ( $\pm$ 27.8) years, and the age range was between 18 and 68 years. Approximately 47% of the participants were completed primary education, followed by 19% secondary, 20% higher secondary, 9.5% graduate and 4.5% post graduate. The study revealed that most of the respondents lived with their joint family (79%), whereas others lived with the separate (21%).

### Hand hygiene practices and its association with different study variables

Table 1 & 2 shows that the participants' response against "hand hygiene practices monitoring and checklist" in view of frequency distribution for every response including routine activity of each household. The mean ( $\pm$ SD) score of the participant's hand hygiene practice was 40.7 ( $\pm$ 2.6) (Table 3). Association of hand hygiene practice with socio-demographic characteristics using "*t*-test" showed statistically significant difference in scores ( $P$ , 0.05) among age, gender and marital status where the practice score was higher among the age group 41-60 years (40.72), married (40.67) and graduates (40.36). the association of hand hygiene practice and socio-demographic variables using ANOVA (one-way analysis of variance test) showed that the mean score changes with category, which is statistically significant ( $P < 0.05$ ) but this study revealed that small variation in the practice score among family income, family status and education but statistically, it was not a significant (Because  $P > 0.05$ ) (Table 3).

**Table 1: Hand Washing Practices Covering all Routine Activity of Household**

<i>Hand Washing Practice</i>	<i>*Always, n (%)</i>	<i>*Sometimes, n (%)</i>	<i>*Never, n (%)</i>
Before meals	1177(98.08)	21(1.75)	2(0.1)
After meals	1187(98.92)	13(1.08)	Nil
After coming from toilet	1058(88.17)	137(11.41)	5(0.42)
With water and soap	996(83)	194(16.17)	10(0.83)
When come home from outside	741(61.75)	369(30.75)	90(7.5)
After handshaking with others	612(51)	304(25.33)	284(23.67)
Before going to bed	605(50.42)	429(35.75)	166(13.83)
After using public transportation	772(64.33)	359(29.92)	69(5.75)
After waking up in the morning	888(74)	270(22.5)	42(3.5)
After touching animals	607(50.58)	579(48.25)	14(1.17)
Before preparing meals	941(78.42)	223(18.58)	36(3)
After washing dishes	1170(97.5)	30(2.5)	Nil
Before touching sick people	300(25)	782(65.17)	18(1.5)
After touching sick people	510(42.5)	662(55.17)	28(2.3)
After cleaning my home	778(64.83)	402(33.5)	20(1.67)
After touching garbage	970(80.83)	225(18.75)	5(0.42)
After coming from farm	780(65)	374(31.17)	46(3.83)
After using pesticides	900(75)	278(23.17)	22(1.83)

*\*Frequency & Percentage Calculation by Response of Participant*

**Table 2: Distribution of hand washing practices followed in households.**

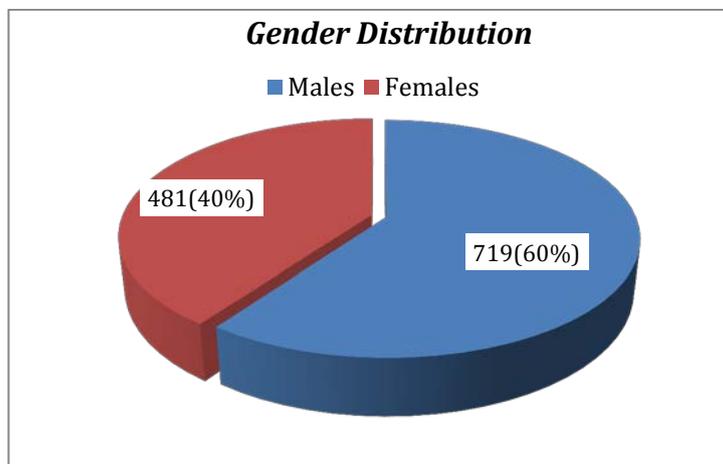
Sr. No.	Hand Hygiene Practices Response	* n=1200 (100%) Yes (%)
1	Use normal soap to wash hands	936(78%)
2	Use of hand sanitizer/antiseptic to wash hands	204(17%)
3	Wash hands up to wrist and elbows	216(18%)
4	Wash finger tips and finger webs	96(8%)
5	Dry hands with towel after washing	996(83%)
6	Wash hands after coming from outside	162(13.5%)
7	Wash hands 5-6 times a day	588(49%)
8	Separate soap available for washing hands	132(11%)
9	Do you use instant sterilizer when you are outside from the home?	24(2%)
10	Cut your nails regularly	1092(91%)
11	Hygienic Toilet Facility	1068(89%)
12	Is hand washing is part of personal hygiene?	960(80%)

\*Frequency & Percentage Calculation by Response of Participant

**Table 3: Association of Participants' hand hygiene practice score with some socio-demographic variables.**

Demographic Variables	N	Mean	SD	p-value
<b>Test Score of Hand Hygiene Practice</b>	1200	40.7	2.6	<0.0001
<b>Age(in year) Mean ± SD</b>	40.4±27.8			
<b>Age Group (in years)</b>				
Up to 20	97	39.9	3.12	0.0001**
21-40	317	40.3	3.01	
41-60	724	40.72	2.78	
61 & above	62	39.2	4.29	
<b>Gender</b>				
Male	719	39.89	3.1	0.0348**
Female	481	40.27	2.98	
<b>Economic Status of Family (Family Income in Rs.)</b>				
Up to 10,000	598	39.98	3.33	0.383
10001 to 25000	379	40.1	3.2	
More than 25000	223	40.33	3	
<b>Marital Status</b>				
Married	270	40.67	2.62	0.0047**
Un-married	930	40.11	2.93	
<b>Family Status</b>				
Joint	948	40.2	3.17	0.481
Separate	252	40.04	3.31	
<b>Education</b>				
Primary	564	39.72	3.64	0.371
Secondary	228	39.9	3.7	
Higher Secondary	240	39.8	3.53	
Graduate	114	40.36	2.66	
Post graduate	54	40.33	2.7	

\*\*Significant When  $p < 0.05$  Note: P-value was derived from independent t-test and by ANOVA (Analysis of Variance) Test. Abbreviations: SD, standard deviation

**Figure 1: Gender Distribution among Study Participants.**

**DISCUSSION:**

The present study attempted to assess hand hygiene practices among the villagers of Gondi Village, Western Maharashtra. It also determined the associations with some socio-demographic variables and provided several significant findings. The results of the study indicate that very few of the respondents maintained their hand hygiene that was not sufficiently enough to prevent infection. In this study, most of the participants washed their hands four to five times in a day, which is an insufficient number for proper hand hygiene. In contrast, majority of the respondents had separate soap for hand wash in their homes; but still need to aware about use of instant hand sterilizer when they are outside of home or preferring fast food etc. This study also focused on the major reasons for skipping hand washing at home and the main reason as per this study perspective is "carelessness". Most of the study was similar to this result and this type of studies will be big initiative to make aware about the people to avoid early sign of infection by proper practice of hand hygiene.

**CONCLUSION:**

The present study concludes that hand hygiene practice is an effective measure towards the infectious diseases such as diarrhea, worms, acidity, stomach problems etc which may generate severe illness also during later stage. Because of hand hygiene is very simple activity, inexpensive and effective so it's important to be aware about knowledge and practices regarding hand hygiene of the villagers. To aware the peoples towards good practices of hand hygiene is a necessary task of local bodies, various government authorities, ASHA workers, PHC's to overcome economic burden at early stage. Present study highlights to villagers that take part in training sessions otherwise read books regarding hand hygiene and its practices it will helps to provide the current and updated knowledge directly helps to produce quality of life. This type of study definitely helps the rural population mainly adolescence to reduce the early mistakes of practicing the hygiene. [14]

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