

## **Assessing Knowledge, Attitudes and Practice of Hand Washing with Soap among Mothers and Caregivers of Children under Five years in Ntungamo District, Uganda**

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### **Abstract**

*Background:* The study of hand washing practices in Ntungamo district is part of a larger strategy being implemented in different countries to decrease the prevalence of childhood diarrhea, in the frame work of the global public – private partnership for hand washing with soap.

*Purpose:* This study of hand washing practices using soap in Ntungamo district aimed at reducing childhood diarrhea prevalence in the district. It represents a preliminary study designed to collect the information necessary to design appropriate strategies to reduce diarrhea prevalence in under five years of age.

*Methods:* The study used quantitative and qualitative methods to collect data from a representative sample of several supervision areas of Ntungamo district.

*Results:* The practice of hand washing after latrine use among the respondents was very low (52%) compared to washing hands before and after meals (77%). The study also revealed a low use of soap during hand washing where (52%) who washed their hands after contact with feces, only 14.6% used soap. Whereas those who washed their hands while handling food were 77%, but out of 77% only 28% used soap

*There was no diarrhea reported among respondents that had A-level education and only 20% of those that had post-secondary education reported having diarrhea episodes among the under-five compared to 64% that reported diarrhea among the under-fives for those that had incomplete primary level of education, 57% among the households of functional adult learning graduates and 49% for those that completed primary level of education.*

**Keywords:** Handing washing, Soap, Caregivers, Supervision areas.

### **Introduction**

The study of hand washing practices in Ntungamo district is part of a larger strategy being implemented in different countries to decrease the prevalence of childhood diarrhea, in the frame work of the global public – private partnership for hand washing with soap.

This research gives the balance between the availability and practice regarding hand washing with soap from the point of view of mothers and caregivers of children under five years of age in the six supervision areas (SA) of Ntungamo district.

Diarrhea affects 14% of children under five years of age in Ntungamo district (DHO 2012).

The repercussions of this infection are clearly evident in the retarded growth and development of these children and are closely associated with chronic malnutrition observed in Ntungamo population.

Hand washing has received significant attention in efforts to promote better hygiene.

The protective effect of hand washing at critical times is multiplied when soap is used. Hand washing plays a key role in preventing person –to – person fecal transmission and water and food contamination, even more so because it combats one of the most aggressive enteropathogens: shigella.

Small scale studies have found that the presence of soap in the household is a determining factor of protection when it is widely used in the household tasks such as laundering and personal bathing and not even necessarily for hand washing (Peru hand washing report 2004). It has also proven to be the only protective measure, being more effective than other hygiene practices in a context of multiple contamination channels. As compared with other preventive measures, hand washing has been shown to have a much greater impact on decreasing the incidence of diarrhea. It is estimated that water and

sanitation programs reduce morbidity from diarrhea by less than 25% while interventions to promote hand washing with soap leads to decrease between 14% and 48%. The focus will be on the mothers and caregivers of children under five years, this is important because children are more vulnerable to diarrhea and acute respiratory infections such as pneumonia. In Uganda, the leading causes of under-five children mortality are malaria (23%), Pneumonia (21%) and diarrhea (17%) where the overall prevalence of diarrhea is 20% (MOH 2005).

This study will explore the current knowledge, attitudes and practice of hand washing with soap among the mothers and caregivers of children under five years in Ntungamo district and in effect contributes to achieving Millennium Development Goal (MDG) 4 which focuses on reducing child mortality by 2/3 by 2015, the ten years Improved Sanitation and Hygiene Strategy (ISH) and the Health Sector Strategic Plan 111 (HSSP111). The HSSP111 states that “over 75percent of Uganda’s disease burden is considered to be preventable as it is primarily caused by poor personal and domestic hygiene and inadequate sanitation practices.”

## Methods

### Study setting and context

The study was conducted in Ntungamo district which is found in south western Uganda, bordering with the districts of Kabale in the south, Rukungiri in the west, Bushenyi, Mbarara in the north and in the east and south the Republic of Tanzania and Rwanda respectively. It covers a total area of 2184.5 square km, with a total population of 469,000 (UBOS 2010 projections) and annual population growth rate of 1.9%.

The district has three counties, one municipal council, three divisions, three town councils, fifteen sub counties, 972 villages and 76428 households. The main economic activity is mixed farming and small-scale business. It has 250 primary schools, 22 secondary schools, 2 tertiary institutions, 41 health facilities in 3 HSD (1 hospital, 3H/C1Vs, 12H/C111s, 25 H/C11s) and 2707 trained VHTs.

Ntungamo district is divided into six Supervision Areas).

SA-1 Rukoni Sub County and Nyakyera sub county

SA-2 Ruhaama Sub County and Rweikiro sub county

SA-3 Ntungamo sub county, Ntungamo Municipal council and Itojo Sub County

D=SA-4 Rubaare Sub County and Ngoma sub county

SA-5 Rugarama Sub County and Kayonza sub county

SA-6 Ihunga Sub County, Kibatsi Sub County, Nyabihoko Sub County and Bwongyera sub county.

### Study design

The study was cross-sectional in nature employing both quantitative and qualitative methods of data collection. We used a structured interview guide with probing and open-ended questions that allowed respondent to give detailed descriptions and examples. The interview guide developed based on the LQAS frame work.

Both random sampling and systematic sampling was used. A list of communities and total population of each supervision area (SA) was determined, then cumulative population and sampling intervals calculated.

A random number was chosen using a random number table, and beginning with a random number, the sampling interval was used to identify 19 communities (villages) for the 19 sets of interviews in each SA.

In the communities, households where interviews were carried out was selected randomly using a random number table, if a village had a household list and the list was up-to-date or could be up dated. And where a village list was not available or could not be up dated, then a sketch map of the village was drawn with the help of a community leader indicating the physical features and land marks in the village, then the village was divided into portions of approximately equal households and the portions numbered. One portion of the village was randomly selected using a random number table and then its households listed with the help of a community leader and a reference household selected.

A random number table was used to select a reference household which was used as a starting point. The next nearest household from the front door of a reference household was the first

household where interviews was carried out if a respondent was available, if not available then the next nearest household was targeted until a household with a proper respondent was got.

### Study units

The study units were mothers and caregivers of children under five years in the sampled households in the six supervision areas.

The study sample size was determined using Lot Quality Assurance Sampling method (LQAS).

A random sample of 19 respondents was used in each SA because, a sample of 19 provides an acceptable level of error for making management decisions; at least 92% of the time it correctly identifies SAs that have reached their coverage target, secondly, samples larger than 19 have practically the same statistical precision as 19. They do not result in better information, and they cost more.

### Data collection and analysis

Structured questionnaires were used, mothers and caregivers of children under five years were targeted. The structured questionnaires helped to come up with the social demographic characteristics of the respondents as well as their knowledge, attitude and practice about hand washing. The questionnaire further generated information about the coverage of hand washing facility and challenges met in installing and maintaining hand washing facilities.

Key informants were interviewed who included health workers, CDAs, VHTs, parish chiefs, and political leaders in the supervision areas.

Structured in-depth interviews were conducted by the author and one trained research assistant between September and October 2013. The research assistant was selected among extension staff and trained in data collection and research techniques.

Data was field edited, coded and entered in the computer and analyzed using SPSS. Consistence of data was maintained using corresponding ID and entry of data was done immediately after collection from the field that evening to ensure accuracy of the data.

Quotes generated from Key informants was entered in the master sheet and findings integrated during presentation of findings to complement each other.

Threats to validity and reliability were minimized through training of research assistants. There was training of research assistants who were knowledgeable about WASH practices. There was pre-testing of study instruments and translation of questionnaires into the local language. At the end of the day's work there was a debriefing meeting to ensure that data was collected as planned.

## Results

### Education level versus hand washing

The level of education clearly influenced the knowledge and practice of hand washing with soap at the household level. The higher the education the more likely that one will adopt to use a hand washing facility for prevention of diarrhea. There was no diarrhea reported among respondents that had A-level education and only 20% of those that had post-secondary education reported having diarrhea episodes among the under-five within the period under consideration compared to 64% that reported diarrhea among the under-fives for those that had incomplete primary level of education, 57% among the households of functional adult learning graduates and 49% for those that completed primary level of education.

**Table 1.** Educational levels of study participants

Education	Frequency	Percent
Never attended	1	0.90%
Functional Adult Literacy	7	6.10%
Incomplete Primary	33	28.90%
Complete primary	35	30.70%
O-level	25	21.90%
A-level	5	4.40%

Post-Secondary	5	4.40%
Vocational training	3	2.60%
<b>Total</b>	<b>114</b>	<b>100.00%</b>

### **Hand washing practices**

The practice of hand washing after latrine use among the respondents was very low (52%) compared to washing hands before and after meals (77%).

The study also revealed a low use of soap during hand washing where (52%) who washed their hands after contact with feces, only 14.6% used soap. Whereas those who washed their hands while handling food were 77%, but out of 72% only 28% used soap.

None of the respondents knew proper procedures of handling of hand washing.

### **Factors that facilitate and hinder hand washing**

Almost 55% of the mothers agreed to have copied the practice from health facilities that had hand washing facilities with soap, 83% from radio while 67% from friends.

Mothers generally wash their hands to keep them clean, avoid germs and remove dirt. Almost all mothers, 100% knew that feces cause diarrhea. Important factors that inhibit hand washing include the multiple household chores of the mothers which compete for the time required to ensure cleanliness.

Mothers (38%) also believe that soap and water are limited and 65% of the mothers without hand washing facilities don't know how to construct tippy taps. Crows eat soap left outside for hand washing and most have resorted not to put soap on hand washing facilities. The study suggests that mothers do not appear to view themselves as contaminators. They reported that it is only necessary to use soap when dirt is evident, that washing well with water sufficient, that they are careful after defecation and therefore do not come into contact with feces.

### **Hand washing coverage among supervision areas**

Supervision area B (Ruhaama and Rweikiniro sub counties) had the highest coverage 5/7 (71.4%) of hand washing with soap among those that had hand washing facilities and supervision area E was the worst with 28.5% (2/7), therefore, more intensive interventions are needed in supervision area E (Rugarama and Kayonza sub counties)

### **Discussion**

A good number of the respondents (30.7%) had primary level of education as the highest level attained, while 28.9% of the respondents had incomplete primary level education, 21.9% had 0- level education and A-level and post-secondary both had 4.4%. Some of the respondents had gone through functional adult learning (6.1%), a few 2.6% had vocational training and 0.9% of the respondents had never attended school.

The level of education clearly influenced the knowledge and practice of hand washing with soap at the household level. The higher the education the more likely that one will adopt to use a hand washing facility for prevention of diarrhea. There was no diarrhea reported among respondents that had A-level education and only 20% of those that had post-secondary education reported having diarrhea episodes among the under-fives within the period under consideration compared to 64% that reported diarrhea among the under-fives for those that had incomplete primary level of education, 57% among the households of functional adult learning graduates and 49% for those that completed primary level of education. This is in line with a survey carried out in Kenya by AMREF (2007) which revealed that level of education had a strong association with hand washing with soap (Schmidt, Aunger R, 2009). Other studies also show that Mothers who know the link between faeces and diarrhea experiences less cases of diarrhea in their homes (Wamai and Barton 1992). They are more likely to observe recommended hygienic practices like hand washing before meals, after contact with stool or after using the toilet. They are also more likely to boil water and have separate storage for drinking water.

The findings are also in agreement with a study carried out in Peru a country found in South America, which found out that diarrhea affects 15% of children under five years especially in rural

areas rain forest and highlands, and among children whose mothers have little schooling (PRISMA September 2004).

The practice of hand washing after latrine use among the respondents was very low (52%) compared to washing hands before and after meals (77%).

In both risk behaviors involving food and feces, the appropriate hand washing is still very low. 77% of the respondents who washed hands before coming into contact with food only 28% of them used soap, while 52% of the respondents who washed hands after getting in contact with feces only 15% of them used soap.

The study also revealed that 73% of the mothers and caregiver of children under-five years wash their hands with soap whenever they are dirty, 55% wash their hands with soap before caring for children, while only 7% and 2% wash their hands after touching animals and public places respectively. This contradicts the study findings in a survey carried out in Kenya by AMREF 2007, a total of 5182 critical opportunities for hand washing was observed and hand washing with soap at 25% of these, hand washing with soap was more often practiced after fecal contact (32%) than in connection with food handling (15%).

The study results indicate that majority 70/114 (61.4%) had no hand washing facilities while 44/114 (38.6) had hand washing facilities and only 14.6% had hand washing facilities with water and soap available at the time of the survey. This is in agreement with other surveys carried out around the world, where the observed rates of hand washing with soap at critical times range from zero percent to 34%. The belief that washing with water alone to remove visible dirt is sufficient to make hands clean is common in most countries (Curtis V, Scott B, Cardosis J, 2005). In Ghana, the drive to use soap for mothers was generally because it felt good to remove dirt matter from hands, refreshing, one way of caring for children, and enhancing their social status. (WHO report 2008). "We could talk about germs until we were blue in the face, and it didn't change behaviors" (Dr. Curtis, 2004).

There are also specific differences in supervision areas as far as hand washing with soap is concerned. Supervision area B (Ruhaama and Rweikiniro sub counties) had the highest coverage 5/7 (71.4%) of hand washing with soap among those that had hand washing facilities and supervision area E was the worst with 28.5% (2/7), therefore, more intensive interventions are needed in supervision area E (Rugarama and Kayonza sub counties) though all supervision areas generally need intervention to increase hand washing with soap coverage.

Availability of water and soap on a hand washing facility, position of the hand washing facility, time and individual behaviors were the factors that respondents identified as motivators and inhibitors of hand washing. Respondents reported that when water and soap are well positioned on the latrine, most people will always use them after latrine use, but also indicated that individual's behavior plays a big role. They also mentioned time as a hindrance to hand washing as mothers are always busy with many household chores.

This is in agreement with Kilmer and Chris (2009) - Effective hand washing with soap takes 8- 15 seconds, followed by thorough rinsing with running water. Studies have shown that around the hospital, medical practitioners often fail to wash their hands because of lack of time, rough paper towels for drying, inconveniently located sinks and hands chapped by frequent washing with drying soap (Kilmer, Chris- october2009).

It is in agreement with Cardosis (2006) who found out that, some cultures are lazy for washing their hands. The bottom line is that some people in this world are simply lazy. When short of time, and there is no one around, it is amazingly easy to let laziness take over.

Majority of the respondents (64.6%) reported no diarrhea in the last three months preceding the survey among under-fives, while 50.4% reported to have had diarrhea in the same period.

Diarrhoea prevalence was high among the households that had no hand washing facility. Supervision area A (Rukoni and Nyakyera) had the highest diarrhoea prevalence of 63% (12/19), followed by supervision area C (Ntungamo s/c, Ntungamo M.C and Itojo s/c) and supervision area D had the least diarrhoea prevalence of 32% (6/19).

The study results indicate that more than a half of the respondents without hand washing facilities in all SAs had diarrhoea episodes, with supervision area A being the worse with almost all the

respondents (10/12)- 83%, reporting diarrhoea episodes in their households among the under-five years of age in the three months preceding the survey.

The survey shows that households with hand washing facilities (HWF) had very low diarrhoea episodes compared to households without hand washing facilities and in the two supervision areas (E & F) had no diarrhoea episodes among the under-fives in the months considered in the survey.

The survey also revealed that diarrhoea episodes are high among respondents that had vocational training 2/3 (67%), incomplete primary level of education 21/33 (64%) followed by those reported to have had functional adult literacy and completed primary level (4/7, 571%, and 17/35, 48.5%) respectively. respondents that had attended post-secondary level had lower diarrhoea episodes (20%), followed by those that had o-level (32%) and there was no diarrhoea episode reported among those that completed A-level education. This clearly indicates that education has a strong association with hand washing at critical times and hence, diarrhoea prevalence.

Majority of the respondents (72.8%) reported radio as one means of getting information about hand washing with soap in the communities, those who reported friends as means of getting information about hand washing were 58.8% and 48.3% mentioned health facilities as the source of information, while only 9.7% mention posters as the source of information. Mothers reported that health facilities are the good demonstration areas for hand washing with soap and that they usually copy the practice when they go seek health care services.

Attitude of mothers and caregivers of children under-five years of age towards hand washing directly affects hand washing with soap coverage. In all supervision areas, the general attitude towards hand washing with soap is poor. Most mothers complained of lack of soap, small gerricans for storing water, poles and ropes for putting up hand washing facilities/stations and even time. But all these are readily available in the communities either for free or low prices. For example, ropes and poles can be got freely in most communities or at low prices from the neighbours.

Majority of the respondents (57.02%) estimated the cost of the hand washing facility to be between 2000 to 5000 shillings while about 40% estimated it to be in the range of 1000-2000 shillings. Households that were found in peri urban areas (3.51%) estimated the cost to be between 5000 - 10,000 shillings. There is a gap of awareness rather than affordability.

## **Conclusion and recommendations**

Most of the sampled households wash their hands during critical events associated with feces or food, however, hand washing with soap is much less frequent. The prevalence of soap in households (48%) does not guarantee frequent hand washing with soap; however, this coupled with high knowledge about hand washing and the relationship between hand washing with soap and diarrhea diseases, it does provide a favorable context for a possible future increase of the practice. A higher percentage of hand washing with soap was reported during the risk events involving feces than during events involving food. Although surveyed participants reported high knowledge (100%) of why hand washing with soap was necessary, seems to contrast with their practice behavior. For example, although mothers reported that hand washing was necessary to avoid contracting diarrhea (100%), only 38% washed their hands after visiting the toilet. Therefore, this study recommends continuous health education for behavior change among the households beginning with the worst supervision areas.

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