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ASSESSMENT OF HANDWASHING PRACTICE AND ASSOICIATED
FACTORS AMONG PRIMARY SCHOOL CHILDREN IN SEBETA TOWN,
OROMIA REGIONAL STATE, ETHIOPIA.

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LIST OF ACRONYMS AND ABBRIVATIONS

PPPHW = Public–Private Partnership for Hand Washing

UNICEF=United Nations Children’s Fund

MDG = Millennium Development Goals

WASH= Water, Sanitation and Hygiene

MoH= Ministry of Health

MoWR =Ministry of Water Resources

MoE= Ministry of Education

MoU= Memorandum of Understanding

UNESCO= United Nations Educational Social and Cultural Organizations

CDC=Center for Disease Control and Preventions

UPE= Universal Primary Education

PPS=Proportionate to population size

SPSS =Statically Package for Social Science

HWWS=Hand washing with soap.

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ABSTRACT

Background: Proper handwashing is one of the simplest, most affordable and effective means of preventing the spread of infection. Studies have recommended handwashing as the best means of diarrheal disease and respiratory tract infections prevention. Handwashing among school children is influenced by different factors like socio-demographic, predisposing, reinforcing and enabling factors. However, these factors may have not been studied well among school children as compared to other classes of population.

Objectives: To assess handwashing practice and associated factors among primary school children in Sebeta town, Oromia Regional State, Ethiopia.

Methodology: Institutional based analytic cross sectional study design was employed on primary school children in Sebeta town. Data on handwashing practice and associated factors were collected from 426 sixth- through eighth-grade students in 6 schools via self-administered questionnaires. School hand washing facilities inspection were also done using observation checklist.

Result: Only one-third (32%) of participants fulfilled the criteria of proper hand washing practice i.e. washing hand with soap always or very often before meal and after visiting toilet. Students with positive attitude were more likely to practice proper handwashing (AOR=2.29; 95%CI=1.43, 3.66). Likewise, those who felt pressure from their important referent were two times more likely to wash their hand (AOR=1.86; 95%CI=1.02, 3.16). Availability and accessibility of soap for hand washing was also strongly associated with handwashing practice (AOR=3.06; 95%CI=1.32, 7.05). On the other hand students from rural areas were less likely to practice proper hand washing than their urban counter part (AOR=0.53; 95%CI=0.30, 0.94).

Conclusion and recommendation: In general this study revealed that only small proportion of study participant practiced proper hand washing behavior and absence of adequate hygiene facility in visited school. Place of residency, attitude, and pressure from important referents and regular access to soap were significantly associated with hand washing. Provision of adequate hygiene facility, further modification of attitude towards handwashing with soap and role modeling is recommended.

1. INTRODUCTION

1.1 Background

Proper handwashing is one of the simplest, most affordable and effective means of stopping the spread of infection. Hands can be contaminated with feces, body fluids, and inanimate objects (1), it is also a common mode of transmission for gastrointestinal and respiratory infections(2). Half of hospital visit and 12% of all admission among children aged from 0 to 14 years are due to infections (3). Among these, respiratory infections and infectious intestinal disease are responsible for 48% and 29% of primary reasons of visit among this age group, respectively (3). In developing countries, 80% of the diseases are associated with poor domestic and personal hygiene and about 2.2 million people die; mostly children die annually due to diarrhea; the same number again die from acute respiratory infections (4-5). Studies have recommended hand washing as the best means of diarrheal disease and respiratory infections prevention although it is not the only route of transmission(6). However, worldwide, the observed rates of handwashing with soap at critical moments in general population (e.g. after visiting toilet) ranges from 0%-34% (7)

Ignaz Semmelweis, an Austrian-Hungarian physician, first demonstrated over 150 years ago that handwashing can prevent the spread of disease. Semmelweis was able to reduce the maternal death rate 90% by requiring medical students to wash their hands between anatomy classes, where they dissected cadavers and performed vaginal exams and deliveries on women. This discovery led to the prevention of numerous infectious diseases in the mid-nineteenth century. However, the idea was mocked by health practitioner. Despite the rocky beginnings, hand washing has become one of the most important aspects in protection against infections worldwide(8). Florence Nightingale, who also believed in the practice of handwashing, stated “every nurse ought to wash their hands very carefully during the day” (9). She is well known for her influence in implementing infection control practices in nursing.

A study conducted by the Global Public–Private Partnership for Hand Washing (PPPHW) which included several sub-Saharan African countries (i.e. Kenya, Senegal, Tanzania, and Uganda)

reported that 17% of participants washed their hands with soap after using toilet, while 45% used only water (10).

Hand washing is especially important for children and adolescents, as these age groups are the most susceptible to infections gained from unwashed hands (11). In addition to this due to the close proximity of children in schools and child care settings, there is a high risk for the spread of infectious disease. Proper handwashing also improves learning and teaching processes by reducing absenteeism. Handwashing reductions in absenteeism in studies and projects around the world shows the following result: 54% (China), 40% (Egypt), 35% (Kenya), 27% (Philippines) and 20% in Colombia(12). Furthermore, approximately about 443 million school days are lost each year due to water-related illnesses, making it a leading factor for school absenteeism in the developing world (13). This can be reduced enormously when children stay in a healthy environment and get used to practicing good hygiene both in and out of school.

Ethiopia and foreign global public health agencies have been taking steps towards enhancing access to resources and to increase health literacy particularly concerning sanitation and hygiene. In 2007, United Nations Children's Fund (UNICEF) launched the Water, Sanitation, and Hygiene (WASH) Program which is designed to promote handwashing and sanitation practices in low income countries including, Ethiopia (14). This can be achieved by provision of hardware aspects, such as the physical infrastructure, sanitation facilities at schools and the availability of safe water. The software side includes the provision of knowledge on hygienic methods followed by their continued use (practices) at the schools. In Ethiopia, the three sectors of WASH: Ministry of Health (MoH), Ministry of Water Resources (MoWR) and Ministry of Education (MoE) has signed a Memorandum of Understanding (MoU) to promote water supply, sanitation and hygiene education in schools(15).

In general, proper handwashing practice must be learnt from childhood so that it becomes routine habit through life. Since school children are agents for behavioral change(7), this study is focused on assessing handwashing practice and associated factors among primary school children in Sebeta town, Oromia Regional State, Ethiopia

1.2 Statement of the problem

It is recommended by CDC that for hands to be washed properly demonstration having the following steps should be provided in school settings; wet hands with running water and apply soap then rubbed vigorously creating friction for at least 20 seconds with special attention paid to the wrist back of hands then between fingers and under the nails and finally rinsed under running water then dried with paper towel (1)

Handwashing with soap is most effective, feasible and cost-effective means of preventing worm infestation, diarrhea and acute respiratory infections among children and adults (16). Handwashing with soap can reduce incidence of diarrhea and thus saves approximately one million lives per year (17). Furthermore, worldwide about 400 million children are infected with worms due to poor hand washing practices. These worms consume nutrients from children, therefore causing abdominal pain and malfunction, impair their learning capacity and thus reduce school attendance (18). In primary schools in England, students are absent due to illness for 3.7% of the sessions that they should attend although it is not known how many of these are due to infections(19).

In Ethiopia more than 250,000 children die every year from sanitation and hygiene related diseases. Some 60 percent of the disease burden is related to poor sanitation and hygiene. Efforts to support the implementation of Universal Primary Education (UPE) policies normally focus on areas such as training and hiring more teachers, building new schools and classrooms, and purchasing textbooks and other teaching materials in Ethiopia.(20). Unfortunately, less consideration is given to the important contribution of clean and healthy school conditions towards better educational achievements (38). A study conducted by UNICEF and MoH found that study participants in Ethiopia had poor status regarding knowledge, attitudes, and practices of hygiene (21). Approximately 60% of children surveyed did not know about the possible transmission of diseases through human waste. Simple hygienic measures such as hand washing with soap were poorly practiced(21). Adequate water supply and sanitation conditions are also remarkably low in many schools in Ethiopia. A study conducted by UNICEF found that, less than one-third of schools had water points and only 5% had handwashing facilities, none of which had soap(22)

Moreover, there are several factors that could influence hand washing practice at school. These could be: socio-demographic, predisposing, reinforcing and enabling factors. In order to change people's hand washing behaviors, there has to be a firm understanding of these factors. Predisposing factors include: knowledge and attitude,(7, 25). The reinforcing factors could be; family habit, peer influence, teachers, health professionals, or adult, media and school hygiene promotion activities (26). In addition there are enabling factors that enable practice to take place which include; availability and accessibility of water, toilet, soap, drying material, handwashing stands e.i washing basins, container and sinks (10).These factors have been studied in most cases focused on primary care takers, community members and health care workers. However, limited information on these influential factors is given on school children.

Although, national initiatives through Hand Washing Day have been made aiming at promoting school children's hand washing practice, further interventions are needed to increase student's frequency and compliance to hand washing practice (27). This can be achieved by involving school children in health promotion activities and making schools sources of education but not sources of infections by improving sanitation facilities; because schools are regarded as appropriate setting in which crucial intervention can be developed. Therefore, due to limited information on handwashing practice and factors influencing handwashing practice among school children, this study is aimed at assessing handwashing practice and associated factors among primary school children in Sebeta town, Oromia Regional State in Ethiopia.

1.3 Significance of the study

The findings of this study will be used by School Management and School Health Club as source of information, because, it will provide objective evidence that guides the development of comprehensive health and hygiene intervention programs in schools. The findings of this study will be of interest to policy makers and to donors who would be interested in supporting in the improvement of education system by mitigating obstacles to healthy school environment. It will also have substantive theoretical significance for practitioners and professionals by contributing to scholarly child health nursing research, practice and education.

2: LITERATURE REVIEWS

2.1 School water supply, sanitation, and hygiene education

A safe and adequate water supply as well as proper sanitation and hygiene promotion is a prerequisite for realizing a healthy and hygienic school environment. The health benefits that could be derived out of safe and adequate water and in improved sanitation and hygiene are numerous, ranging from a reduction in acute watery diarrhea, intestinal worms, trachoma, and increased levels of self-esteem from a clean toilet(6).World Health Organization estimates that 88% of diarrheal diseases are caused by inadequate water supply, inadequate sanitation and hygiene (28). In developing countries every year more than 2.2 million people die from diseases associated with lack of access to safe drinking water, inadequate sanitation, and poor hygiene most of which are children (29).

According to United Nations Educational Social and Cultural Organization(UNESCO), 668 million children are enrolled in primary school (30). This is approximately 84 percent of the total number of school-age children in the world (30). When children become accustomed to healthy habits at school, the behavior is ingrained and can last a lifetime (31). Children can also act as agents of change, influencing their siblings and parents to change their own hygiene practices and even serving as catalysts for the adoption of improved sanitation facilities in their communities (32). Children spend a large portion of their day at school. They are less likely to get sick from diarrhea and other hygiene-related diseases if their school has an effective handwashing programme, adequate sanitation and safe drinking water (33). Their families are also less likely to get sick when children are healthy: Studies show that diseases contracted at school can lead to infections in up to half of household members (34). The most important way schools can have an impact on health is by promoting children's good hygiene behavior through hygiene education and by making hand washing with soap a daily part of the school routine (35).

Above all, every child has the right to adequate water and sanitation, including in school. This reason is enough to prioritize, fund and improve WASH in Schools programme everywhere. The case is made even stronger by the growing body of evidence linking water, sanitation and hygiene education in schools to children's health and educational achievement (35).

2.2: Hand washing practice among primary school children

Worldwide handwashing is still being practiced at very low extent even at critical moments, e.i before eating and after using toilet. In Colombia 36.6% of school children reported to wash hands with soap always or very often after using toilet and before eating(36). However, only 3% of school children always wash their hands for at least 20 seconds whenever hands were contaminated. In addition, these children reported to wash hands rarely after coughing or sneezing (36). Moreover, in Uganda 54% in school children were observed after using toilet but only 5% used soap (13). On the other hand, study done in School Children in Angolela in the Amhara regional state of Ethiopia showed, while 76.7% of students reported that handwashing after defecation is important, only 14.8% reported actually following this practice.(37). Therefore, this implies that appropriate hand washing practice is still a problem among school children.

2.3: Socio-demographic factors and handwashing practice among school children

School children's handwashing practice can be related to socio- demographic characteristics such as sex, age, residence, grade, parental education and etc. In Colombia mother's education level was found being associated with school children's handwashing intentions, while, age, gender type of school and father's education was not related. Students informed by their parents were twice as likely to practice proper hand-washing behavior as were students who did not mention parents as a source of information(36). According to the study conducted in Benishangul Gumuz regional state of Ethiopia there was a fragile and significantly varied of practice of handwashing during critical moments among different grades(38). Another study showed hand washing behavior difference by rural and urban setting where urban dwellers practice hand washing than their rural counter parts (39).

2.4: Predisposing factors and hand washing practice among primary school children

Hand washing practice depends on the knowledge acquired concerning the practice (36). Study conducted in Tanzania showed more than half (57%) of those participated primary school children know important aspects of handwashing practice (6). Another study done in School Children in Angolela in Amhara regional state of Ethiopia reported that approximately 52% of students were classified as having adequate knowledge of proper hygiene (37). Therefore, this implies that hand washing knowledge is significantly low among school children.

Attitudes on other hand can act as influential factors among school children hand washing practice depending on their belief and expected outcome. Since attitudes are regarded as determinants of people's behavior, it is important to modify people's behavior and beliefs (36). According the study done in Tanzania attitudes towards hand washing practice were not associated hand washing practice (6). On other hand the study done in Colombia(36) reported positive attitude being related to hand washing intentions thus recommended further modification of individuals attitude.

2.5: Reinforcing factors and hand washing practice among school children

Important referents like friends, parents, health professionals, teachers or other adults apart from parents are among role model of children. The most often cited sources of information about hygiene and hand washing were parents (88.5%), followed by school (66.7%), then the media (56.8%)(36). Furthermore, study done in Ugandan schools found teachers as barriers to hand washing practice since they do not emphasize on the importance of hand washing (13). According to the study done in Ethiopia reason that can influence hygiene practice among school children is the low level of parental literacy (37). In light of these observations, future school-based health and hygiene education programs should include strategies to involve family members, particularly mothers and sibling.

2.6: Enabling factors and hand washing practice among school children

Sufficient water-collection points and water-use facilities should be available in the school to allow convenient access to, and use of, water for drinking, personal hygiene, food preparation, cleaning and laundry. There should be a reliable drinking-water point accessible for staff and school-children, including those with disabilities, at all times. There should be a reliable water point, with soap or a suitable alternative that is available at all the critical points within the school, particularly in toilets and kitchens (40).

For an effective school WASH, sufficient, accessible, private, secure, clean and culturally appropriate toilets should be provided for school-children and staff. One toilet per 25 girls and one toilet plus one urinal per 50 boys is required. Distance to toilets should not be more than 30 meters from all users. Male and female toilets should be completely separated. They should provide privacy and security. Toilets should be appropriate to local cultural and social conditions, age and gender appropriate and accessible for children with disabilities or suffering from chronic

diseases (29). Toilets should be hygienic to use and easy to clean and have convenient handwashing facilities close by (41).

Hygiene facilities that influence handwashing practice include water, washing station, soap and accessible toilets. In Colombia 18.9% and 16.7% do not wash hands in schools because of lack of water and soap respectively (36). Moreover in India only 10% of the schools have only adequate hand washing points with soap (6). Water supply is inadequate in most developing countries (42). Availability of water has crucial impact on frequency of handwashing among individuals (17). For example in Malawi about 12% of school children do not have water supply; thus it makes difficult for children to practice hand washing while at school (43).

CONCEPTUAL FRAME WORK

Individuals may be more likely to wash their hands when they understand why and how to do it. Patterns of health promoting behavior, however, are not merely products of independent individuals (44). Individual choices about healthy lifestyles fit into a structural scheme grounded in group behavior and social interaction (45) and are not always rational or autonomous. Individuals may have control over their choices, but not over the conditions, or structures, in which these choices are made (46). These structural factors determine what choices are realistically most likely to be operationalised and made routine (47). In this regard, the conceptual framework for this study intended to show factors that could influence hand washing practice which could be: Socio-demographic, predisposing, reinforcing and enabling factors.

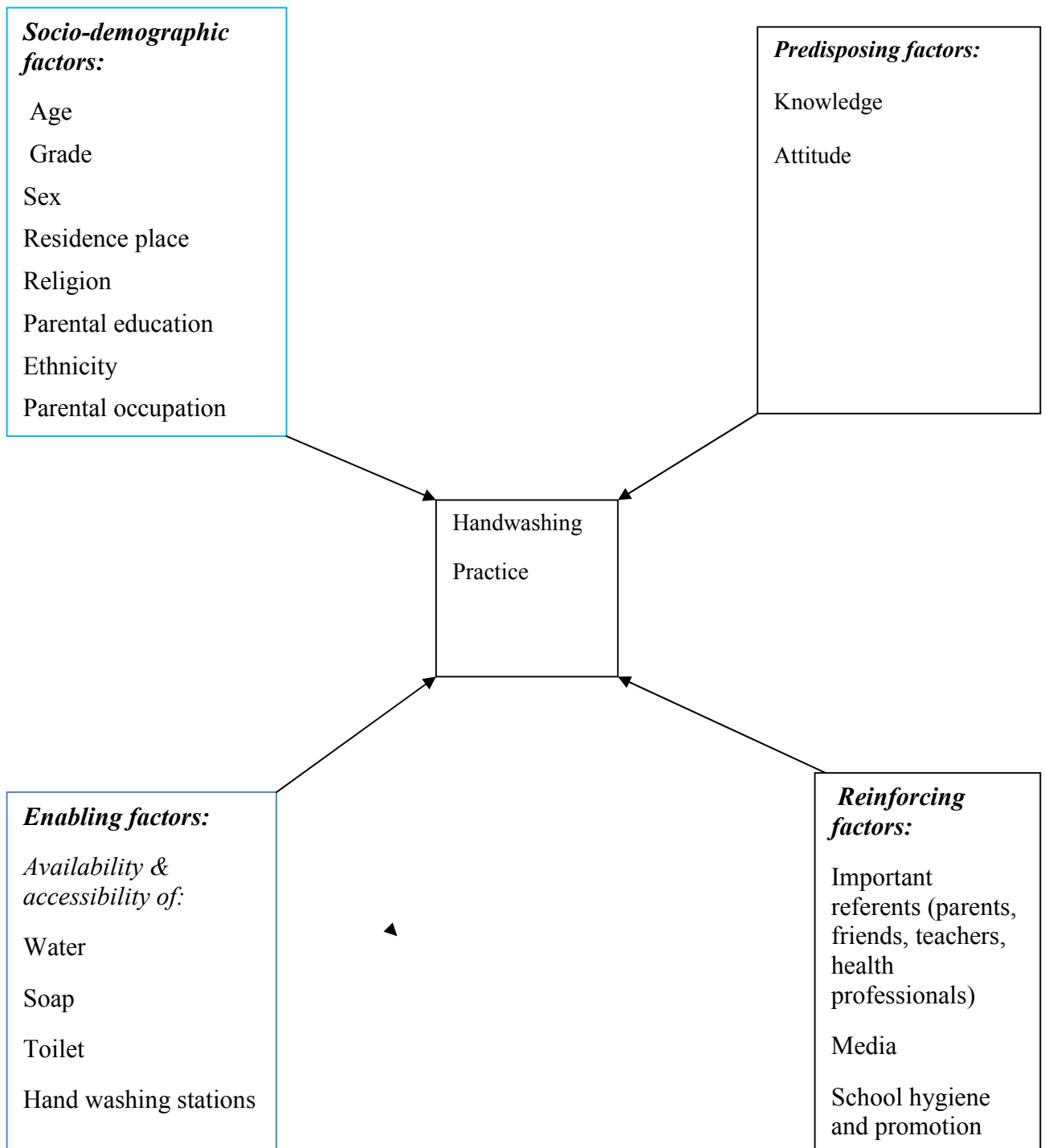


Figure1: Diagram on conceptual frame work of factors affecting hand washing among school children (Adapted from theory of structuration & Theory of formal rationality, and health lifestyles)

3. OBJECTIVES OF THE STUDY

3.1 General Objectives

To assess handwashing practice and associated factors among primary school children in Sebeta town, Oromia Regional State, Ethiopia.

3.2 Specific Objectives

- ✓ To assess hand washing practices among primary school children in Sebeta town.
- ✓ To find out the relationship between socio-demographic factors and children's hand washing practices.
- ✓ To determine the relationship between predisposing factors and children's hand washing practices
- ✓ To determine the relationship between reinforcing factors and children's hand washing practices.
- ✓ To determine the relationship between enabling factors and children's hand washing practices.

4. METHODOLOGY

4.1 Study Area

The study was conducted in Sebeta town, which is capital city of Sebeta Hawas district found in Oromia Special Zone surrounding Finfine located in the Southern direction on 24Km from Addis Ababa. Administratively it is divided into 8 kebeles. The town covers an area of 9,000 square kilometers and has population estimated to be 131,000. Primary school students in public schools are estimated to be 13,404. There are 12 public primary schools four of which have only up to first cycle i.e. 1-4. However, all other schools have both first and second cycle, among which one is special, need school.

4.2 Study design and study period

Institutional based cross sectional study design was employed from March, 2014 to July, 2014.

4.3 Source population and Study population

Primary school students in Sebeta town were used as source population while study population consisted of students from grade 6th to 8th of both sexes attending primary school in the town. These grades were chosen because reading proficiency at this age enables respondents to complete the questionnaire within the time available.

Inclusion Criteria

- ✓ All regular grade 6th to 8th primary school students in Sebeta town.
- ✓ Primary school using local language as academic media of communication.

Exclusion criteria

- ✓ Night class students, because data will be collected during working hours.
- ✓ Students with visual and hearing impairment
- ✓ Students in lower grades e.i less than grade 6th.

4.4 Sample size determination

To determine the sample size for the study population the following assumption is made. The actual sample size for the study was determined using the formula for single Population proportion by assuming 5% marginal error and 95% confidence interval at alpha ($\alpha = 0.05$) and the population proportion ($P = 14.8\%$)(37)

So based on the above information the total sample size is calculated by using the following formula:

$$N = Z^2 * P (100-P) / E^2$$

Where,

P=Proportion of primary school students who practice proper hand washing practice=14.8 (37)

E= Marginal of error set at 5%

Z=Standard normal deviation set at 1.96 for 95% confidence level

$$N = \frac{(1.96)^2 * 14.8(100-14.8)}{(5)^2} = 194$$

By assuming non-response rate and incomplete questionnaire taking 10%, the total sample size will be:

$$N = (194 \times 10\%) + 194 = 213$$

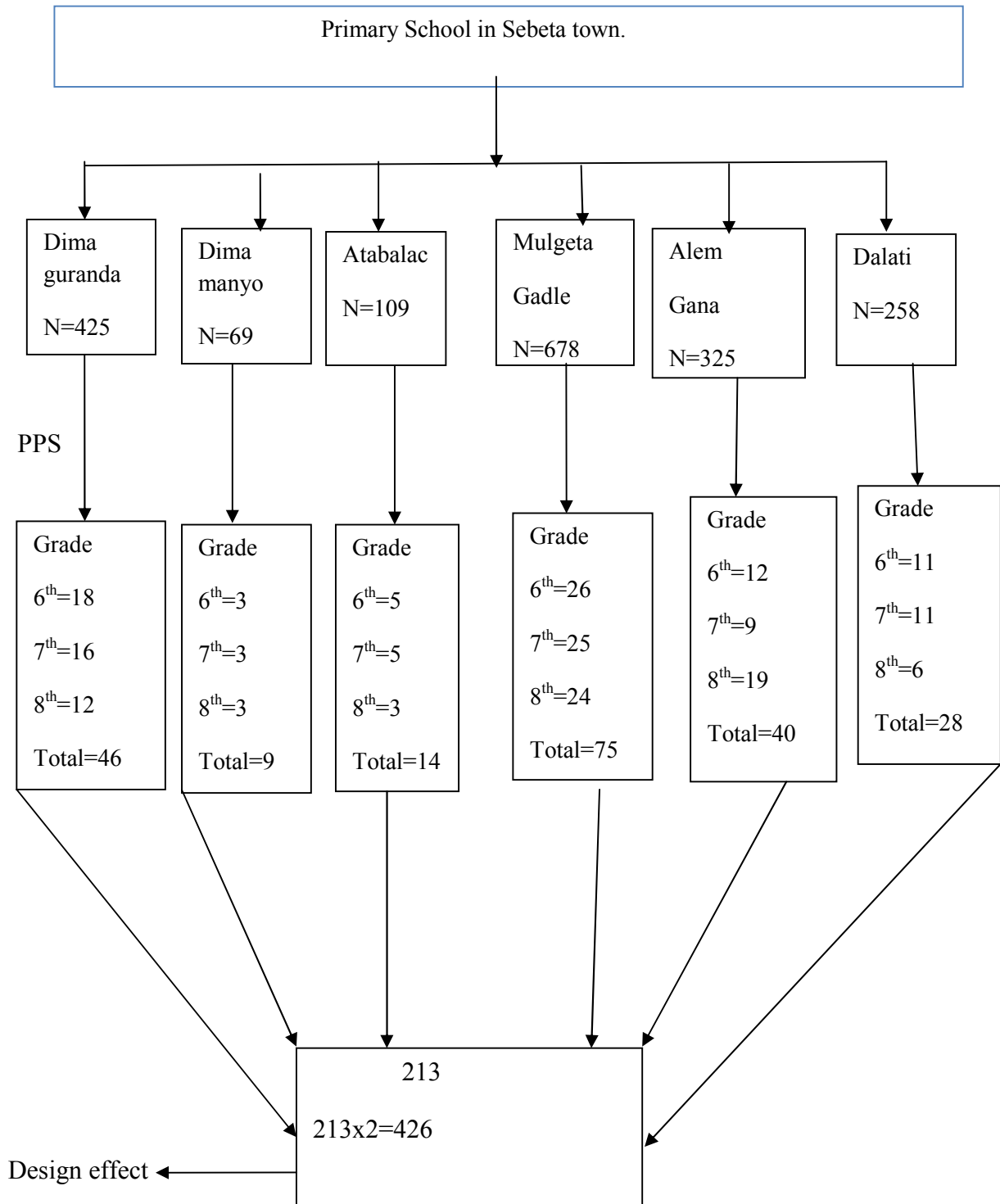
The required sample size was the largest one. i.e. 213 and the design effect $\rightarrow 213 * 2 = 426$

4.5 Sampling Procedure

Multistage probability sampling technique with 2 stages was employed in order to select fairly representative students in Sebeta town.

First stage: Primary school was selected from Woreda Education Office. Considering the calculated sample size i.e.426, it was distributed to selected schools proportionate to their population size. Calculated sample was distributed to each grade proportional to population size then two sections were randomly selected from each grade.

Second stage: Finally randomly selected students were invited to participate in the survey till the required numbers of participant is obtained.



Key: PPS=Proportionate Population Size

Figure2: Diagram on schematic presentation of sampling procedure.

4.6 Data collection tools and procedures

Data was collected through structured self-administered questionnaire and observation checklist. Information on hand washing practice, socio-demographic, predisposing, and reinforcing factors influencing hand washing practice was collected using self-administered questionnaire. Data on enabling factors was collected through observation checklist. The tool was developed in English and translated to Afan Oromo to insure the clarity of questions for the respondents. The tool was adapted after reviewing different literatures with some modifications based on stated objectives. The questionnaire was pre-tested using 10% of the sample size on non-sampled primary school students out of study area prior to the date of data collection . Eight data collectors were recruited and a half day orientation was given by principal investigator on each part of the questionnaires. Close supervision was also be held by principal investigator.

4.7 Study Variables

Dependent Variable

- Hand washing practice.

Independent Variables

- Socio-demographic factors (Age, Grade, Sex, Residence place, Religion, Mother's educational level, Father's educational level, Parental occupation, Ethnicity)
- Predisposing factors (Attitude and Knowledge)
- Reinforcing factors(Important referents , Media, School hygiene promotion activities)
- Enabling factors(Handwashing station, toilet, availability and accessibly of soap and water)

4.8 Data quality assurance

To assure the data quality, half day training was given for eight data collectors and four supervisors. In each school students were gathered in classes or halls. Appropriate information and instruction on the objective; relevance of the study were presented to the respondents. Students were informed on confidentiality of the information they would give and that participation would be voluntary. Then consent form was distributed to children and was collected after being signed. Then teachers were asked to leave the venue in order to provide more freedom for students to answer all questions without tension.

Data collectors stayed with respondents until all questions were filled. The principal investigator re-checked the completeness of the questionnaire before submission.

4.9 Data analysis procedure

Filled-in questionnaires were checked for completeness and consistency of the responses. Data were pre-coded manually and it was entered into EPI-info 3.5.2 then transported to SPSS 21 version for analysis. Editing of the data occurred after data entry by running frequencies and checking for missing values. Associations between dependent variables and independent factors were examined in logistic regression models and are expressed as crude odds ratios (COR) and adjusted odds ratio (AOR), and their corresponding 95% confidence intervals (CIs) were obtained from logistic regression models. Odds ratios (OR) were reported together with their 95% confidence intervals (CI).

4.10 Conceptual and Operational definition of variables

Handwashing practice: The act of cleansing hands with the use of water and soap during critical moments like after visiting toilet and before meal or other critical episodes of germ contamination. Handwashing practice was assessed based on two criteria i.e. handwashing with soap after using toilet and handwashing with soap before eating. Items measuring each criterion on 5 point frequency scale ranging from 1=always to 5=never. The 5 frequency table was dichotomized whereby those who answered 1=always to 2= very often were classified as washers (scale 0) and 3=often to 5= never were classified as non washers (scale 1). The dichotomized items were added up to create summative index point. Students who reported 1= always to 2=very often for both criterion were classified as proper handwashing category.

Attitudes: A belief about soap and water in relation to handwashing practice and degree to which handwashing is positively or negatively valued by an individual. Attitudes towards handwashing was be assessed based on criteria using the 5 point Likert scale related to belief about hand washing with soap. (Eg: If you wash your hands many times with water you do not need to use soap.). The scale ranging from 1= strongly disagree to 5= strongly agree was dichotomized. The dichotomized item was added up to create summative index. Then students who answered 1= strongly disagree or 2= disagree for all questions were classified as having positive attitude towards handwashing practice while those who will score 3= neutral to 5=strongly agree to all criteria were be classified as having negative attitudes towards handwashing practice.

Knowledge: Knowledge of individual about infectious diseases transmission, the critical times of handwashing and health outcome associated with handwashing. Knowledge on handwashing was assessed based on eight questions related to infectious diseases transmission, critical times of handwashing and health outcome associated with handwashing (eg: hand should be washed even after touching someone's hand). In each item those who answered correctly scored 1 and those who answered wrongly will score 0. Those who scored 4 and more were be classified as having sufficient knowledge and those who scored 3 and less will be classified as having insufficient knowledge.

Important referents: Are individuals from which children perceive pressure to wash their hands with soap. Reinforcing factors were assessed using 4 important referents (parents, friends, teachers, and health professionals) based on the 5 point frequency scale 1=always to 5=never. The 5 point frequency scale was dichotomized whereby those who scored 1= always to 2= very often were classified as perceiving high pressure from important referents (score 0) and those who scored 3=often to 5=never will be classified as perceiving less pressure from important referents (score 1). The dichotomized items were be added up to create summative index. Those who scored 1= always or 2= very often were regarded as perceiving high pressure from important referents on washing hand with soap.

Handwashing facility: Availability and accessibility of running water, soap or handwashing station and toilet which is culturally accepted and friendly with children. School hygiene facilities was assessed using observation checklist consisting of "yes" or "no" answers. Hygiene index was computed using a combination of four hygiene facilities in school (running water+ soap + washing station + toilet). Those schools with 3 facilities were regarded as having medium amount of hygiene facilities while those with 2 and less than 2 have low amount of hygiene facilities and the schools with supplied with all hygiene facility were be considered as having high amount of hygiene facility.

4.11 Ethical consideration

Approval letter was taken from ethical committee of Addis Ababa University School of Allied Health Sciences Department of Nursing and Midwifery and it was given to Sebeta town education bureau. Then letter of permission was granted from education bureau and it was given each school. Confidentiality of all study participants was assured. Everybody was informed that no names or direct identification made to the questionnaire. Study participant were requested to participate voluntarily.

4.12 Data dissemination plan

The result of the study were communicated to Addis Ababa University and all attempts made to present the findings to scientific conferences. Copy of the material was submitted to Addis Ababa University and Education and Health bureau of Sebeta town. Furthermore, attempt will be made to publish the finding in local and international reputable journal.

5: RESULT

5.1: Socio-demographic characteristics of children

A total of 426 children were invited and all of them participated in the study so, response rate was 100%. However, 4(0.9%) of the responses were excluded from the analysis because of incomplete responses while 422 students completed the questionnaires. Out of total participants 35.1%, 32.2% and 32.7 were from grade 6,7and 8 respectively. From total participants 43.4% were males and 56.6% were from urban areas. Mean age of participants was 14.42 years (SD=1.43).Other socio-demographic characteristics of study participant are presented in Table 1

Table1: Socio-demographic characteristics of study participants among primary school students in Sebeta town, June 28, 2014

Characteristics	Category	Number (n)	Percentage (%)
Grade	Six	148	35.1
	seven	136	32.2
	eight	138	32.7
Sex	Male	183	43.4
	Female	239	56.6
Age group	11-13	113	26.8
	14-18	309	73.2
Residency	Urban	133	31.5
	Rural	289	65.5
Religion	Orthodox	295	69.9
	Protestant	65	14.9
	Muslim	54	12.8
	Others	10	2.4
Ethnicity	Oromo	380	90
	Amhara	32	7.6
	Tigre	6	1.4
	Others	4	0.9
Mother's educational Status	Illiterate	124	29.9
	Primary school	188	44.5
	High school	45	10.7
	College and above	65	15.4
Father's educational Status	Illiterate	71	16.8
	Primary school	171	40.5
	High school	69	16.4
	College and above	111	26.3
Parent's occupation	Civil servant	103	24.4
	Merchant	65	15.4
	Farmer	220	52.1
	Others	34	8.1

5.2: Hand washing practice among primary school children

Approximately one-third of children (32%) practiced proper hand washing according to criteria defined in the method (i.e. washing hands “always” or “very often” with soap after visiting toilet and before meal). However, 62.3% washed their hands with soap after visiting toilet and 66.6% washed their hands using soap before meal. Out of total participants 37.7% and 33.4% never wash their hands with soap after visiting toilet and before meal respectively. Distribution of HWWS after toilet and before meal of respondents on different frequency is depicted below (Figure 1)

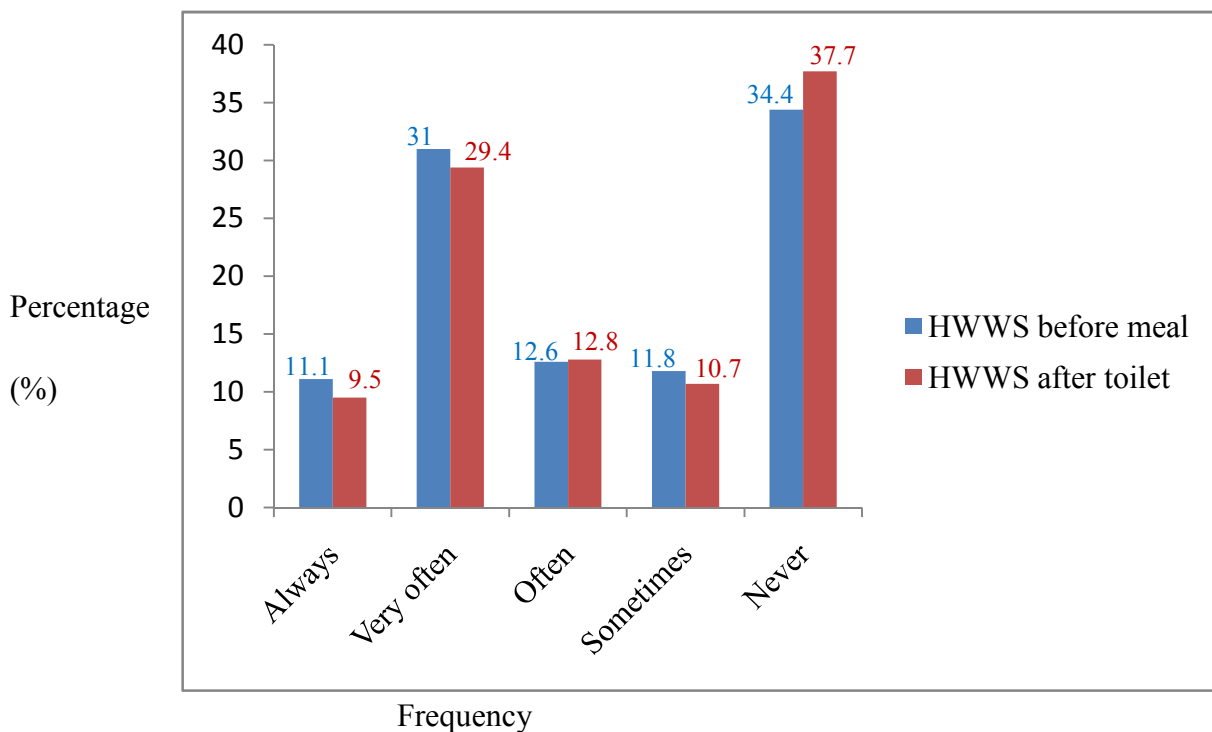


Figure2: Distribution of hand washing practice among primary school in Sebeta town Oromia Regional state, Ethiopia, June, 2014.

5.4: Predisposing factors and children's hand washing practice

Nearly half of participated children (49.3%) have positive attitude towards hand washing with soap whereas (50.7%) have negative attitude. Approximately two thirds of children (66.4%) were found to have sufficient knowledge related to important aspects of hand washing practice while the rest had insufficient knowledge (Table2).

5.5: Reinforcing factors and children's hand washing practices

The most stated referents were parents (92.7%) followed by teachers (89.1%) and health professionals (83.2%) then friends (70.9%). Only 23.9% of participated children fulfilled the criteria of perceiving high pressure to wash their hands from important referents. The cited media as sources of information about hand washing were television (57.1%), radio (49.5%), leaflet (30.1%) and newspaper (24%). From the six schools included in the survey only one school has sanitation and hygiene club. Although all schools claimed hand washing day celebration, only half of students witnessed the celebration and from this only about one third of children (35%) reported they had actually celebrated so far (Table 2).

5.6: Enabling factors and children hand washing practice

Observation at school showed that out of six schools, handwashing station was absent at five schools. In one schools there was handwashing station installed outside the latrines, unfortunately it had no water supply. Four out of six schools had running water supply. All six schools did not have soap for handwashing. From the sampled 6 schools, there were 80 toilets, and toilet student ratios were 1:65 and 1:78 for male and female students, respectively. According to criteria defined in the method only one school fall under category of medium hygiene facility and none of them fulfills criteria of high hygiene facility. About 85.5% and 91.4% of students reported regular access to soap and water at home respectively (Table 2)

Table 2: Study variable and participating children in primary school in Sebeta town, June 2014

Characteristics	Category	Number(n)	Percentages (%)
Handwashing practice	Proper	135	32
	Improper	287	68
Knowledge	Sufficient	280	66.4
	Insufficient	142	33.2
Attitude	Positive	208	49.3
	Negative	214	50.7
Pressure from important referent	High	101	23.9
	Low	321	76.1
School hand washing facility	Medium	381	90.3
	Low	41	9.7

5.7: Bivariate logistic analysis between school children's hand washing practice and associated factors.

Bivariate analysis result showed that students in grades 7 and 8 were two times more likely to wash their hands as compared to those who were in grade 6 (COR=1.93; 95% CI=1.15, 3.23) and in grade 8 (COR=1.77; 95%CI=1.06, 2.97). On the other hand, students from rural areas were less likely to wash their hands properly than those who were from urban areas (COR=0.48; 95%CI=0.29, 0.77). Students with positive attitude on hand washing were 2.6 times more likely to practice proper hand washing as compared with students with negative attitude (COR=2.6; 95% CI=1.7, 3.9). Children who perceive high pressure from their important referents were almost twice as likely to report proper hand washing practice as were children with less pressure (OR=1.9; 95% CI=1.22, 3.09). Regular availability and accessibility of soap is also strongly associated with proper hand washing practice whereby children who had access to soap at home were about four times more likely to practice proper hand washing (COR=3.61; 95% CI=1.66, 7.83). Bivariate analysis also showed association between religion and hand washing practice whereby students whose religion is Muslim exercise hand washing practice than other classes of religion (COR=1.91; 95%CI=1.05, 3.45). Other factors were not found to be significantly associated with proper hand washing practice (**Table 3**

Table 3: Bivariate analysis of factors influencing hand washing with soap among primary school students in Sebeta town, June, 2014

Factors	Handwashing Practice Proper N (%)	Improper N (%)	COR (95%CI)	P-Value
Age				
11-13years	71(24.7)	42(31.1)	1.00	
14-18years	216(73.5)	93(68.9)	0.72(.046,1.14)	0.16
Grade				
Six (Ref)	113(39.4)	35(25.9)	1.00	
Seven	85(29)	51(37.8)	1.93(1.15, 3.23)	0.012
Eight	89(31)	49(36.9)	1.77(1.06, 2.93)	0.029
Sex				
Female	156(54.4)	83(61.5)	1.00	
Male	131(45.6)	52(38.5)	0.74(0.49, 1.13)	0.16

Table 3 continued >>>

Residency				
Urban (Ref)	183(63.8)	106(78.5)	1.00	
Rural	104 (36.2)	29(21.5)	0.48(0.29, 0.77)	0.003
Religion				
Orthodox(Ref)	208(72.5)	87(64.4)	1.00	
Protestant	41(14.3)	21(16.3)	1.28(0.72, 2.28)	0.39
Muslim	30(10.5)	24(17.8)	1.91(1.05, 3.45)	0.03
Others	8(2.8)	2(1.5)	0.59(0.12, 2.87)	0.52
Mother's education				
Illiterate (Ref)	85(29.6)	39(28.9)	1.00	
Primary school	133(46.3)	55(40.7)	0.90(0.55, 1.47)	0.67
Secondary school	33(11.5)	12(8.9)	0.79(0.37, 1.69)	0.55
College and above	36(12.5)	29(21.5)	1.75(0.94, 3.26)	0.07
Father's education				
Illiterate (Ref)	55(19.2)	16(11.9)	1.00	0.16
Primary school	117(40.8)	54(40)	1.58(0.83, 3.01)	0.05
Secondary school	43(15)	26(19.3)	2.07(0.99, 4.35)	0.07
College and above	72(25.1)	29(28.9)	1.86(0.94, 3.67)	
Ethnicity				
Oromo (Ref)	260(90.6)	120(88.9)	1.00	
Amhara	21(7.3)	11(8.1)	1.13(0.53, 2.42)	0.74
Tigre	5(1.7)	1(0.7)	0.43(0.05, 3.75)	0.44
Others	1(0.3)	3(2.2)	6.5(0.66, 63.13)	0.10
Parental occupation				
Civil servant (Ref)	63(22)	40(26.9)	1.00	
Merchant	43(15)	22(16.6)	0.8(0.42, 1.5)	0.51
Farmer	156(54.4)	64(47.4)	0.64(0.39, 1.05)	0.08
Others	25(8.7)	9(6.7)	0.56(0.24, 1.33)	0.19
Knowledge				
Insufficient (Ref)	104(36.2)	38(28.1)	1.00	
Sufficient	183(63.8)	97(71.9)	1.45(0.92, 2.2)	0.10
Attitude				
Negative (Ref)	167(58.2)	47(34.8)	1.00	
Positive	88(65.2)	120(41.8)	2.6(1.76, 3.9)	.000
School hygiene facility				
Low (Ref)	25(8.7)	16(11.9)	1.00	
Medium	262(91.3)	119(88.1)	0.76(0.36, 1.37)	0.3
Water at home				
Absent or inaccessible(Ref)	28(9.8)	10(7.4)	1.00	
Present and accessible	258(90.2)	125(92.6)	1.35(0.63, 2.8)	0.42
Soap at home				
Absent or inaccessible(Ref)	53(18.5)	8(5.9)	1.00	
Absent and accessible	233(81.5)	127(94.1)	3.61(1.66, 7.83)	0.001
Important referent				
Less pressured (Ref)	230(80.1)	91(67.4)	1.00	
Highly pressured	57(19.9)	44(32.6)	1.95(1.22, 3.09)	0.005

5.8: Multivariate logistic analysis between school children's hand washing practice and associated factors

Associations that were found to be significant in the bivariate analysis at a p-value <0.05 were included in the multivariate analysis to determine which factors best explained or predicted proper handwashing practice. Included variables were: grade, residency place, attitudes, important referent, soap, handwashing facility, mother's educational level, father's educational level, parent's occupation, religion, and ethnicity. After controlling for other factors, place of residency, attitude, and pressure from important referent and availability of soap were found to be significant predictor of proper handwashing practice.

Residency place was significant predictor of proper hand washing practice whereby students from rural areas were less likely to practice proper hand washing than their urban counter parts(AOR=0.53;95%CI=0.30, 0.94). Students with positive attitude on hand washing were two times more likely to practice proper hand washing than students with negative attitude (AOR=2.29;95%CI=0.43, 3.66). Those who felt pressure from important referent were more likely to practice proper hand washing than who did not feel pressure from important referent(AOR=1.86 95%CI=1.02, 3.16). Children who had regular access to soap were about three times more likely to practice proper hand washing than those who had no access to soap (AOR=3.06;95%CI=1.32, 7.05). Other factors remained not significant predictor of proper hand washing practice (**Table 4**).

Table 4: Multivariate analysis of factors influencing hand washing with soap among primary school students in Sebeta town, June, 2014

Factors	Handwashing Practice Proper N (%)	Improper N (%)	AOR(95%CI)	P-value
Grade				
Six (Ref)	113(39.4)	35(25.9)	1.00	
Seven	85(29)	51(37.8)	1.77(0.99, 3.17)	0.05
Eight	89(31)	49(36.9)	1.62(0.90, 2.90)	0.10
Residency				
Urban (Ref)	183(63.8)	106(78.5)	1.00	
Rural	104 (36.2)	29(21.5)	0.53(0.30, 0.94)	0.03
Religion				
Orthodox(Ref)	208(72.5)	87(64.4)	1.00	
Protestant	41(14.3)	21(16.3)	1.18(0.60, 2.30)	0.06
Muslim	30(10.5)	24(17.8)	1.72(0.86, 3.75)	0.11
Others	8(2.8)	2(1.5)	0.71(0.12, 3.95)	0.62
Mother's education				
Illiterate (Ref)	85(29.6)	39(28.9)	1.00	
Primary school	133(46.3)	55(40.7)	0.58(0.32, 1.05)	0.07
Secondary school	33(11.5)	12(8.9)	0.41(0.15, 1.07)	0.06
College and above	36(12.5)	29(21.5)	1.30(0.51, 3.30)	0.57
Father's education				
Illiterate (Ref)	55(19.2)	16(11.9)	1.00	
Primary school	117(40.8)	54(40)	1.88(0.87, 4.04)	0.10
Secondary school	43(15)	26(19.3)	1.37(0.94, 5.99)	0.06
College and above	72(25.1)	29(28.9)	1.23(0.42, 3.61)	0.70
Ethnicity				
Oromo (Ref)	260(90.6)	120(88.9)	1.00	
Amhara	21(7.3)	11(8.1)	1.18(0.50, 2.79)	0.62
Tigre	5(1.7)	1(0.7)	0.24(0.02, 2.42)	0.29
Others	1(0.3)	3(2.2)	8.74 (0.61, 121.13)	0.10
Parental occupation				
Civil servant (Ref)	63(22)	40(26.9)	1.00	
Merchant	43(15)	22(16.6)	0.84(0.35, 1.99)	0.70
Farmer	156(54.4)	64(47.4)	0.83(0.37, 1.88)	0.66
Others	25(8.7)	9(6.7)	0.65(0.22, 1.86)	0.42
Attitude				
Negative (Ref)	167(58.2)	47(34.8)	1.00	
Positive	88(65.2)	120(41.8)	2.29(1.43, 3.66)	0.001
School hygiene facility				
Low (Ref)	25(8.7)	16(11.9)	1.00	
Medium	262(91.3)	119(88.1)	0.65(0.30, 1.41)	0.28
Soap at home				
Absent or inaccessible(Ref)	53(18.5)	8(5.9)		
Absent and accessible	233(81.5)	127(94.1)	3.062(1.32,7.05)	0.009
Important referent				
Less pressured (Ref)	230(80.1)	91(67.4)		
Highly pressured	57(19.9)	44(32.6)	1.86(1.09,3.16)	0.021

6. DISCUSSION

6.1: Handwashing practice among school children

Although more than 150 years have passed since Semmelweis demonstrated the effectiveness of hand washing in preventing nosocomial infections (9) low compliance with hand-washing initiatives is still noted among school children (48). The results from this study revealed relatively small (32%) proportions of primary school children practice proper hand washing behavior. A poor rate of hand washing was in line with what other previous studies had shown in Tanzania and Colombia among school children (6, 36). Generally, global figures indicate hand washing is still practiced to a low extent (7). Hence more hygiene empowering intervention should be emphasized among school children as those done in Pakistan and Kenya which brought tremendous improvement among school children (25). World health organization recommends that there has to be public-private partnership during hand washing promotion interventions(7).

6.2: Socio-demographic characteristics of children

In this study, there was a fragile and significantly varied of practice of handwashing during critical moments among different grades(38). This finding is similar the study done in Benishangul Gumuz regional state of Ethiopia. The finding underlines the importance of targeting the both lower and higher grade children in HWS education at school. The findings of this study demonstrated no sex differences on hand washing practice. Similar findings were found in previous study (6). Children from urban areas more likely to wash their hands those from rural areas. However, it is also worth noting that the study was done in town and students from rural villages near the town attending primary schools in the town were included. Therefore, contrast was not true urban-rural comparison, implying that children in both areas were almost homogenous. As recommended by WHO on both rural and urban schools should be targeted for hand washing intervention with similar emphasis (7). Bivariate analysis also showed association between religion and hand washing practice whereby students whose religion is Muslim exercises hand washing practice than other classes of religion. This could be because of religious ritual of washing before prayer.

6.3: Predisposing factors and hand washing practice

The findings of the study indicated that two thirds of children had sufficient knowledge about important aspects of hand washing. Nevertheless, knowledge status was not associated with hand washing practice. Similar studies were obtained from the study done in Colombia and Tanzania (6, 36). However, there is low knowledge about hand washing in many parts of the word. As correctly reported by other studies (51) this study has also shown that students in higher grades (grade seven and eight) were more aware than the ones in lower grades (grade six) since knowledge grows as children progress from lower to higher grades. However, high individual's awareness does not guarantee the performance of corresponding behavior. For this reason factors other than knowledge should be looked at in hygiene intervention to reinforce people's hand washing behavior. There should be a formation of school hygiene education program that aims at enabling children to translate the knowledge they have into practice. (52).Furthermore, hygiene education combined with accessible hand washing facilities results in sustainable increase in hand washing frequency among school children (53).

Attitudes, which reflect the degree to which performance of a behavior is positively or negatively valued by an individual (54), were found to be important in predicting hand-washing practice. Respondents who expressed positive attitudes were twice as likely to report proper hand washing as were those with negative attitudes. Attitudes are shaped by salient beliefs, perception of the expected outcomes, and subjective value of the expected outcomes (54). In this study half of respondents showed positive attitude towards hand washing. Therefore, to further reinforce positive attitudes toward hand washing; negative beliefs related to hand hygiene and use of soap in hand washing need to be modified(55,56). Similarly the study done in Colombia(36) reported positive attitude being related to hand washing intentions thus recommended further modification of individuals attitude.

6.4: Reinforcing factors and children's hand washing practices

Important referents are regarded as role models and individuals normally learn from their role models (58). In this study parents, friends, health professionals and teachers were the important referents and strongly predicted hand washing practice. Similar referents were also mentioned by primary school children in Colombia as well as Tanzania and this factor increased likelihood of proper hand washing behavior (6, 36).It was also elaborated in the stage of change theory that a person can perform certain behaviors after seeing the behavior performed by someone else.

Hence, it is easier for children to adhere to hand washing practice if their role models are performing the behavior and providing consistent reminder (57). Therefore, hygiene intervention to succeed in this target group health education programme for children's important referents should get special emphasis since they are role models and thus their opinion matters a lot in influencing children to adapt hand washing behavior.

Media adverts are sources of information to the community which might act as behavior change agent. Participant in this study cited television and radio adverts as the common sources of hand washing information. However, radio coverage much wider than television (31) more adverts could be through radios. In Ethiopia, since the establishment of the National WASH movement a number of successful activities were accomplished to improve hand washing knowledge and practices, these include: the development of promotional and didactic materials in the five major Ethiopian languages (Amharic, Oromiffa, Afar, Somali and Tigrigna), complementary radio and television promotional spots (49). Introduction to these adverts has shown remarkable achievements in countries like Ghana (7) and Pakistan (25) which led to full commitment among school children and other community members. Therefore lessons learnt from Ghana and Pakistan can be adapted and modified to Ethiopian situations.

Sanitation and health clubs are helpful in relaying of health messages both at school and home (38). According to this study only one school had sanitation and health club. However, it was not only the availability of these clubs in the school that matters but its active functionality. In previous studies only a few students claimed that their school sanitation clubs were not functioning as required (38). Therefore active and functional sanitation clubs in schools are believed to be of paramount benefits in increasing hand washing frequency and compliance.

Hand Washing Day is national as well as global initiative aiming at promoting school children's hand washing practice (27). However, according to this study, although all schools claimed hand washing day celebration, only half of students witnessed the celebration and one third of children (35%) reported they had actually celebrated so far. This showed that it was not inclusive or participatory. Water, Sanitation, and Hygiene (WASH) Program is launched by UNICEF the which is designed to promote handwashing and sanitation practices in low income countries(14).

In Ethiopia, the three sectors of WASH: Ministry of Health (MoH), Ministry of Water Resources (MoWR) and Ministry of Education (MoE) has signed a Memorandum of Understanding (MoU) to promote water supply, sanitation and hygiene education in schools(15). However, in this study school hygiene facility is inadequate.

6.5: Enabling factors and children hand washing practice

In this study, running water was observed to be present in four out of six schools. Availability of water is very potential since it has been proven to have crucial impact on hand washing frequency and compliance of hand washing among school children (36). In Uganda, lack of reliable water supply was identified as hindering for improved school sanitation (58). Hence, as stated by WHO (7) provision of water for hand washing near the toilets serves as a visible reminder to wash hand and acts as social motivator.

According to national guideline, for an effective school WASH, one toilet per 25 girls and one toilet plus one urinal per 50 boys is required. Toilets should be hygienic to use and easy to clean and have convenient handwashing facilities close by (29, 41). This regulation makes no reference, however, to the availability of supplies such as toilet paper and soap or to hand washing facilities in school cafeterias or lunchrooms. In this study all schools have toilets but student toilet ratio (i.e. 1:65 for male and 1:78 for females) is not consistent with national standard. Therefore to meet the recommended standard a considerable number of additional toilet and units are required with necessary levels of, privacy, safety and cleanliness.

Hand washing stations are stated as important determinants of hand washing compliance (59).Absence of soap for hand washing act as a barrier to hand washing practice since it beaks dirt and grease that carries most of the germs which cannot be removed by water alone. (24). As correctly recommended by WHO hand washing with soap is one of the most important hygiene behaviors which should be promoted among school children. (7). In this study unavailability of hand washing station and soap were observed to be barriers to proper hand washing practices in the schools visited. Therefore, special attention should be taken into consideration in provision of adequate water supply, handwashing stations and sanitation facilities in schools.

5.6: Strength of the study

- The response rate was 100% which enabled us to assume that target population is reflected with reasonable degree of accuracy.
- Design effect was considered due to two stages sampling procedure where by this effect was adjusted by doubling sample size which allows for variation of characteristics among study participants.
- More over this study used bivariate and multivariate statistical tests which enabled us to identify factors most likely influence hand washing practice.

5.7: Limitations of the study

- Dichotomization of o variables during data processing might have reduced better fitting of data (31). Therefore cost of dichotomization should not be ignored when interpreting the findings.
- This study relied on self reported information thus over or under reporting of proper hand washing practice could have occurred since direct observation on actual practices was not done on participant. However, students were well informed on preciseness of the information they provide.
- Furthermore, given the study was institutional based not community based so its generalization will be limited.
- Students in less than grade 6 are excluded because of time and resource scarcity
- Quantitative method enabled us to identify factors influencing hand washing practice which is what the study is assessing on. However, those results do not allow us to make causal relationship between handwashing practice and a factor influencing the practice since it was cross sectional study.
- Another limitation of the study is that it did not use observational study which is more exploring children's hand washing behaviour.

7: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

In general this study revealed that only small proportion of children practiced proper hand washing behavior in the study area. The results from both bivariate and multivariate logistic regression analysis confirmed the strong significant the association between: place of residency, attitude, and pressure from important referents and regular access to soap. Proper hand washing is more likely to be practiced in children: having positive attitude, who perceive positive pressure from their role models and who have regular access to soap at home. On the other hand proper hand washing behavior is less likely to be practiced when children are from rural area. All other factors included were confirmed to have no association with proper hand washing practice. From observation the school hygiene facilities were inadequate in schools visited acting as barrier to proper hand washing.

7.2 Recommendations

On the basis of findings obtained from this study the followings are recommended:

- Since proper hand washing is practiced to a low extent in the area of study Sebeta district should give a top priority to hygiene empowering intervention which could be achieved by ensuring multi sectorial approach within public-private partnership frame work to target both urban and rural areas.
- School management should also try their best to establish school hygiene facilities, health clubs and other sanitation and hygiene promotion activities.
- Ministry of Education needs to put more emphasis on modification of children attitude, further increasing their knowledge by implementing hygiene education programs and role modeling and establishing hygiene clubs.
- For hygiene intervention succeed in this target group health professionals especially health extension workers with a close contact with the community should organize health education programme which put special emphasis on children's important referents since they are role models and thus their opinion matters a lot in influencing children to adapt hand washing behavior.

- Ministry of Health (MoH), Ministry of Water Resources (MoWR) and Ministry of Education (MoE) have to work in collaboration as per their agreement i.e. Memorandum of Understanding (MoU) to promote water supply, sanitation and hygiene education in schools
- Active involvement of communities and their participation is important for sustainability of sanitation promotion activities.
- Further research using qualitative and observational study on all primary school students should be done in order to get richer information on how to improve the adaptation of hand washing behavior among school children.

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APPENDIXES

Annex 1: Information Sheet (English Version)

Code No: _____

Greeting: Good morning /Good afternoon

Dear, Participant

My name is _____ (name of data collector); I am here to collect research data. The research is sponsored by Addis Ababa University School of graduate studies. The research title: Assessment of handwashing practice and associated factors among primary school children in Sebeta town, Oromia regional state, Ethiopia carried out by Mathewos Mekonnen is student in child health nursing.

Procedure: Your participation will involve answering self-administered questionnaire and your expected time of commitment for this study is 25-30 minutes.

Risks: There are no any risks associated with being in this research.

Benefits: You may not receive a direct benefit if you agree to participate. However, people in the future may benefit from the information obtained from this research.

Contact to Subject: Contact at 0917044369 or matemek2010@gmail.com for questions about the research or if you think you have been harmed as a result of joining this research.

Right of the participant: Your decision to be in this study is voluntary. You will not be penalized or lose benefits if you decide not to participate or if you decide to stop participating.

Annex 2: Subject Information Sheet (Afan Oromo Version)

Lakkoofsa Coodii: _____

Ani maqaan koo_____ (maqaa nama odeeffanoo sassaabuu)jedhama. Qorannoo mata dureen isaa “Qorannoo shaakala harka dhiqachuu fi haalota murteessan kan barattoota sadarkaa tokkoffaaf magaalaa Sabbataatti,Mootummaa Naannoo Oromiyaa,Itiyoopiyaa” jedhu Yuunivesitii Finfinnetiin sponsorsii ta’en sassaaba. Qorataan qorannoo kanaa Mathewos Mekonnen barataa Yuunivesitii Finfinneti.

Adeemsa: Gaaffilee barreeffamaa dhuunfaadhaan sii dhiyaatan deebisuudha.

Miidhaa : Qorannoo kanaa wajjin wal qabatu hin jiru.

Bu’aa: Bu’aa kallattii qorannoo kana irraa argachuu dhiisuu dandeessa,garuu gara fuulduraatti, nammoota biraaf bu’aa ni buusa.

Quunnamtii: Yoo qorannicha ilaalchisee gaaffii yoo qabaatte 0917044369 ykn matemek2010@gmail.com na argachuu dandeessa.

Iccitii: Maqaa kee hin barreessin, odeeffannoo ati laattu qorataan qorannichaa itti fayyadama.

Mirga hirmaataa: Qorannoo kana keessatti hirmaachuun fedha kee guutuu irratti hundaa’a. Hirmaachuu dhiisuuf miidhaan si irra gahu hin jiru.

Annex 3: Consent Form (English Version)

Dear respondent,

I am interested in learning more about your knowledge, attitude and practice related handwashing and hand washing facility of your school. This questionnaire is designed for a research work which will be approved by Addis Ababa University College of health sciences school of allied health sciences department of nursing and midwifery to be conducted in partial fulfillment of the requirements for the degree of master in and child health nursing

I hope you will help me by answering these questions. None of your answers will be available to anyone .Do not give your name. I really need your honest response to better understand knowledge, attitude and practice related handwashing and hand washing facility of the schools in the town.

The results of the study will hopefully serve as an important input to intervention programmes that aim at improving children's health and primary school children in particular.

I thank you in advance for taking your time to answer my questions.

Would you be willing to participate in the study? _____ Agree _____ Disagree

Interviewer's name _____ Signature _____ Date _____

Supervisor's name _____ Signature _____

Guiding Principle: For most questions possible answers are listed, following instructions fill answers accordingly.

Annex 4: Consent Form (Afan Oromo Version)

Kabajamaa/tuu barataa/ttuu,

Wanti ani qorachuu fedhu shaakala harka dhiqachuu akkasumas, wantoota harka dhiqachuuf nama barbaachisan mana barumsaa kee keessa jiru baruudha. Gaaffileen kun kan inni qophaa'eef hojii qorannoo fi qo'ano Yuunivarsiitii Finfinnee muummeen barnootaa Narsiingii fi Miidiwaayiferii raggassisu, barnootaa digirii lammaffaa fayyaa daa'immanii irratti godhamuuf.

Gaaffilee kanneen deebisuudhaan akka ati deggersa naaf gootu nan abdadha. Iccitiin deebii keetii ni eegama. Maqaa kee hin barreessin .Deebii sirrii fi amanamaa ta'e sirraa argachuun barbaada.

Bu'aan qorannoo kanaa sagantaalee fayyaa ijoollee, keessumattuu barattoota sadarkaa tokkoffaaf akka oolu abdiin qaba.

Gaaffilee kanaaf deebii argachuuf yeroo kee waanan fudhachuu barbaaduuf durseen kabajaan si gaafadha.

Qorannoo kana keessatti hirmaachuuf fedha qabdaa? Eeyyee _____, lakkii _____

Maqaa gaafatamaa _____, Mallattoo _____, Guyyaa _____

Maqaa supervaayiseerii _____, Mallattoo _____

Qajeelfama waliigalaa

Gaaffilee baayyeedhaaf deebiin ta'u tarreeffamee jiraa. Kanneen biroof akka gaafatamtetti deebisi.

Annex 5: Questionnaires (English Version)

School Identification Code: ____/____ Student Identification Code: ____/____

A. Socio-demographic Characteristics			
Sr.No	Questions	Possible answer	Skip
101	Sex	1) Male 2) Female	
102	Grade	_____	
103	Age	_____	
104	Religion	1) Orthodox 2) Protestant 3) Muslim 4) Others _____	
105	Residence	1) Urban 2) Rural	
106	Ethnicity	1) Oromo 2) Amhara 3) Tigre 4) Other, specify _____	
107	Mother's Educational Students	1) Unable to write and read 2) Last grade attended _____ 3) College and above college	
108	Father's Educational Students	1) Unable to write and read 2) Last grade attended _____ 3) College and above college	
109	Parents' Occupation	1) Civil servant 2) Merchant 3) Farmer 4) Others 'specify _____	
B. Predisposing factors			
i. Knowledge on hand washing			
201	Do human's feces contain germs?	1) Yes 2) No 3) Don't know	
202	Are all clean objects are not free from germs?	1) Yes 2) No 3) don't know	
203	Does human's urine contain germs?	1)yes 2)no 3) don't know	

204	Can germs be acquired when desks, door, books and animals are touched?	1) Yes 2) No 3) don't know	
205	Which of the following disease result from poor handwashing?(more than one answer is possible)	1) Diarrhea 2) Common cold 3) Trachoma 4) Skin infections	
206	What are necessary materials for handwashing?	1) Water only 2) Soap and water	
207	At which of the following junctures hand washing with soap is needed ?(more than one answer is possible)	1) After touching somebody's hand 2) After coughing or sneezing 3) Before touching young infants' body	
208	Which of the following is way of infectious disease transmission?(more than one answer is possible)	1) Failure to wash hand 2) Sneezing or coughing 3) Contaminated water or food	
	ii. Information on attitude		
301	If you wash your hands really well with water you don't need to use soap.	1) strongly disagree 2) disagree 3) neutral 4) agree 5) strongly agree	
302	You only need to wash your hands with soap if they look dirty or smell bad	1) strongly disagree 2) disagree 3) neutral 4) agree 5) strongly agree	
303	Young infant's feces do not contain germs.	1) strongly disagree 2) disagree 3) neutral 4) agree 5) strongly agree	
304	Washing your hands with soap before feeding a child is important only if you use your hands to feed them	1) strongly disagree 2) disagree 3) neutral 4) agree 4) strongly agree	
	C) Hand washing practice		
401	How often do you wash your hand with soap after visiting toilet?	1) Always 2) Very often 3) Often 4) Sometimes 5) Never	

403	How often do you wash your hand with soap before meal?	1) Always 2) Very often 3) Often 4) Sometimes 5) Never	
D) Reinforcing factor			
501	From which media have you heard about hand washing?	1) Television 2) Radio 3) Leaflets 4) News paper 5) Other(specify)_____	
502	How often do you perceive to pressure to wash your hand with soap from your parents?	1) Always 2) Very Often 3) Often 4) Sometimes 5) Never	
503	How often do you perceive pressure to wash your hand with soap from your friends?	1) Always 2) Very often 3) Often 4) Sometimes 5) Never	
504	How often do you perceive pressure to wash your hand with soap from your teachers?	1) Always 2) Very often 3) Often 4) Sometimes 5) Never	
505	How often do perceive pressure to wash your hand with soap from health professionals?	1 Always 2 Very often 3 Often 4 Sometimes 5 Never	
506	Do you get soap easily to wash your hand before meal and after visiting toilet at home?	1) yes 2) no	
507	Do you get water easily to wash your hand before meal and after visiting toilet at home?	1) Yes 2) No	
508	Is there any hygiene and sanitation club in your school?	1) Yes 2) No	If no Skip to 510
509	If yes are you member of the club?	1) Yes 2) No	
510	Does your school celebrate Hand Washing Day?	1) Yes 2) No	
511	If yes, have you ever participated?	1)Yes, 2)No	

Annex 7: Observation Checklist (English Version)

School identification code: _____

Sr.	Indicator	Possible answer	Skip
S01	No of teachers	No_ of male _____ No_ of female _____	
S02	Number of student's	No_ of males _____ No_ of females _____	
S03	Are there latrines in the school	1)Yes 2)No	
S04	Total number of existing latrines	_____	
S05	Are the latrines functioning	1)Yes 2) No	
S06	Are there separate latrines for girls and boys?	1)Yes 2)No	
S07	Does the facility have doors or curtains for privacy	1)yes 2) No	
S07	Do latrines smell bad?	1)Yes 2)No	
S08	Is running water available?	1)Yes 2) No	
S09	Is the water source accessible to students	1)Yes 2)No	
S10	Is there hand washing station?	1)Yes 2)No	
S11	Location of hand washing facilities	1)Next to latrines 2)Within walking distance 3)Inside house	
S13	What kind of facility?	1)Sink and faucet(running) 2)Bucket(hand poured) Other _____	
S14	Does hand facility have	1) Water inside 2) Soap next to it	
S15	Is the ground wet from the recent hand washing	1) Yes 2) No	
S16	Does the school have rules and regulation on personal hygiene?	1) Yes 2) No	
S17	Is there any remainder for hand washing near latrine?	1) Yes 2) No	
S18	Is there any WASH activities?	1)Yes 2)No	
S19	Is there any poster on the wall about hand washing?		

Annex 6: Questionnaire (Afan Oromo Version)

T.Lakk.	Odeeffannoo bu’uuraa	Deebii	
101	Saala	1) Dhiiraa 2) Durba	
102	Kutaa	_____	
103	Umuriin	_____	
104	Amantii	1) Ortodoksii 2) Pirootestaantii 3) Musiliima 4) Kan biro, _____	
105	Bakka jireenyaa	1) Magaalaa 2) Baadiyyaa	
106	Sabummaa	1) Oromoo 2) Amaaraa 3) Tigiree 4) Kan biro, _____	
107	Sadarkaa barnootaa haadhaa	1) Kan hin barreessineef hin dubbisne 2) Kutaa isa dhumaa, _____ 3) Kolleejjii fi isaa ol	
108	Sadarkaa barnootaa abbaa	1) Kan hin barreessineef hin dubbisne 2) Kutaa isa dhumaa, _____ 3) Kolleejjii fi isaa ol	
109	Hojii maatii	1) Hojii mootummaa 2) Daldaalaa 3) Qotee bulaa 4) Kan biro	
Beekumsa waa’ee harka dhiqannaa			
201	Bobbaan namaa jarmiilee dhukkuba fidan of keessaa qabaa?	1) Eeyyee 2) Lakkii 3) Hin beeku	
203	Balbala, kitaaba, deeskii fi bineeldota manaa harkaan tuquun harka namaa ni faalaa?	1) Eeyyee 2) Lakkii 3) Hin beeku	
204	Wanti qulqulluun hundinuu jarmiilee irraa bilisaa?	1) Eeyyee 2) Lakkii 3) Hin beeku	
205	Fincaan namaa jarmiilee dhukkuba fidan of keessaa qabaa?	1) Eeyyee 2) Lakkii 3) Hin beeku	
206	Dhukkuboota armaan gadii keessaa kamtu harka dhiqachuu dhiisuudhaan darba?	1) Garaa kaasaa 2) Utaalloo 3) Traakoomaa	

		4) Dhukkuba gogaa	
207	Wantoonni harka dhiqachuuf nu barbaachisan:	1) Bishaan qofa 2) Saamunaa/daaraa fi bishaan.	
	Harka dhiqachuun kan barbaachisu yoom yoomfaadha?	1) qofa'uun booda 2) daa'ima xiqqoo tuquun dura, 3) Nama dubbisuun booda	
	Ilaalcha waa'ee harka dhiqachuu		
301	Harka kee bishaaniin sirriitti dhiqannaan saamunaa si hin barbaachisu.	1) Baay'een ittiin morma 2) Ittiin morma 3) Hin deggerus hin mormus 4) Ittin walii gala. 5) Baay'een itti walii gala.	
302	Harki kee yoo xuraa'e qofaa saamunaadhaan dhiqachuun si barbaachisa	1) Baay'een ittiin morma 2) Ittiin morma 3) Hin deggerus hin mormus 4) Ittin walii gala. 5) Baay'een itti walii gala	
303	Bobbaan daa'imman aannan qofaa hodhanii jarmiilee dhukkuba fidan of keessaa hin qabu.	1) Baay'een ittiin morma 2) Ittiin morma 3) Hin deggerus hin mormus 4) Ittin walii gala. 5) Baay'een itti walii gala	
304	Yeroo daa'ima nyaachisnu fal'aana fayyadamnaan harka dhiqachuun hin barbaachisu.	1) Baay'een ittiin morma 2) Ittiin morma 3) Hin deggerus hin mormus 4) Ittin walii gala. 5) Baay'een itti walii gala	
	Gaaffilee shaakala harka dhiqachuu		
401	Mana fincaanii booda harka koo saamunaadhaan ka an dhiqadhu:	1) Yeroo hundaa dha 2) Yeroo baay'ee dha 3) Yeroo tokko tokko dha. 4) Darbee darbeen dha 5) Dhiqadhee hin beeku.	
402	Nyaata dura harka koo saamunaadhaan ka an dhiqadhu:	1) Yeroo hundaa dha 2) Yeroo baay'ee dha 3) Yeroo tokko tokko dha. 4) Darbee darbeen dha 5) Dhiqadhee hin beeku.	
	Gaaffilee waa' ee hawaasummaa		
501	Waa'ee harka dhiqachuu meeshaa sab -quunamtii kam irraa dhageesse?	1) Television 2) Raadiyoo 3) Gaaxexaa	

		4) Waraqaa beeksisaa Kan biro _____	
502	Harka koo akkan dhiqadhuuf matiin koo:	1) Yeroo hunda natti himu 2) Yeroo baay'ee natti himu 3) Al tokko tokko natti himu 4) Darbee darbeen qofaa natti himu 5) Gonkumaa nattin himan	
503	Harka koo akkan dhiqadhuuf hiriyoonna koo:	1) Yeroo hunda natti himu 2) Yeroo baay'ee natti himu 3) Al tokko tokko natti himu 4) Darbee darbeen qofaa natti himu 5) Gonkumaa nattin himan	
504	Harka koo akkan dhiqadhuuf barssiisonni koo:	1) Yeroo hunda natti himu 2) Yeroo baay'ee natti himu 3) Al tokko tokko natti himu 4) Darbee darbeen qofaa natti himu 5) Gonkumaa nattin himan	
505	Harka koo akkan dhiqadhuuf ogeesonni fayyaa koo:	1) Yeroo hunda natti himu 2) Yeroo baay'ee natti himu 3) Al tokko tokko natti himu 4) Darbee darbeen qofaa natti himu 5) Gonkumaa nattin himan	
506	Mana fincaanii dhaquu booda fi Nyaata dura harka kee dhiaqacuuf saamunaa salphaatti manaa ni argattaa?	1) Eeyyee 2) Lakkii	
507	Mana fincaanii dhaquu booda fi Nyaata dura harka kee dhiaqacuuf bishaan manaa salphaatti manaa ni argattaa?	1) Eeyyee 2) Lakkii	
508	Gumiin waa' ee qulqullinaa mana barumsaa kee keessaa jiraa?	1) Eeyyee 2) Lakkii	
509	Gaaffii 511 f eeyyee yoo ta'e ati miseensaa?	1) Eeyyee 2) Lakkii	
510	Manni barumsaa kee guyyaa harka dhiqannaa ni kabajaa?	1) Eeyyee 2) Lakkii	
511	Gaaffii 515f eeyyee yoo ta'e ati kabajjee ni beektaa?	1) Eeyyee 2) Lakkii	

Annex 8: Observation Checklist (Afan Oromo Version)

Coodii mana barumsichaa: _____

T.Lakk.	Agarsiiftuu	Filannoo	
T01	Baay'ina barsiisotaa	1) Dhalaa _____ 2) Dhiira _____	
T02	Baay'ina barattoota	1) Dhalaa _____ 2) Dhiira _____	
T03	Gumiin fayyaa ni jiraa?	1) Eeyyee 2) Lakkii	
T04	Gumii qulqullinaa jiraa?	1) Eeyyee 2) Lakkii	
T05	Waa'ee qulqullinaa irratti poosterii akkasumas barreeffamni ni jiraa?	1) Eeyyee 2) Lakkii	
T06	“WASH” irratti sochiin godhamu ni jiraa?	1) Eeyyee 2) Lakkii	
T07	Manni fincaanii ni jiraa?	1) Eeyyee 2) Lakkii	
T08	Mana incaanii meeqatu jira?	_____	
T09	Manni fincaanii tajaajila kennaa jiraa/uu?	1) Eeyyee 2) Lakkii	
T10	Manni fincaanii dhalaa fi dhiiraa qofa qofaattii?	1) Eeyyee 2) Lakkii	
T11	Manni fincaanii balbala ykn golgaa qabaa?	1) Eeyyee 2) Lakkii	
T12	Manni fincaanichaa foolii badaa qabaa?	1) Eeyyee 2) Lakkii	
T13	Manni fincaanichaa bira bishaan ujummoo jiraa?	1) Eeyyee 2) Lakkii	
T14	Bishaanichatti barataan hundnuu rakkoo malee itti fayyadamuu ni danda'aa?	1) Eeyyee 2) Lakkii	
T15	Iddoon harka itti dhiqatan mana fincaanichaa bira jiraa?	1) Eeyyee 2) Lakkii	
T16	Yoo jiraate gosti isaa maali?	1) Ujummoo 2) Budduqsanii kan dhiqatan	
T17	Iddoo harka itti dhiqatan maal qaba?	1) Bishaan 2) Saamunaa ykn filannoo biraa	
T18	Iddoon harka itti dhiqatan sun jiidhaadhaa?	1) Eeyyee 2) Lakkii	
T19	Naannoo mana fincaanichaa barattoonni akka harka dhiqatan wanti yaadachiisu jiraa?	1) Eeyyee 2) Lakkii	

Declaration

I, the undersigned declare that this is my original work and has not been presented in this or any other University and all sources of materials used for this thesis have been fully acknowledged.

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Signature: _____

Date: _____

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This proposal has been submitted for examination for approval as University

Advisor: Fekadu Aga

Signature: _____

Date: _____