HARAMAYA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF FACTORs INFLUENCING WATER,SANITATION AND HYGIENE(WASH) PRACTICE AMONG SECOND CYCLE PRIMARY SCHOOL STUDENTS IN DIRE DAWA ADMINISTR ATION, EASTERN ETHIOPIA

MSc Thesis

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BIOGRAPHICAL SKETCH

I was born on October 23, 1967 G.C in Chiro Woreda, West Harargae Zone, Oromiya region, Ethiopia. I attended my primary and secondary education in Kunni primary school and Chercher comprehensive secondary school respectively. I graduated with diploma in Environmental Health in 1989 from Gondar Medical College and also I graduate with BSc. in Environmental Health in 2011 G.C from Haramaya University. I had served as Environmental Health professional since 1989 in Dire Dawa Administration Regional Health Bureau.

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ABBREVIATION

AA	Addis Ababa
CLTS	Community Led Total Sanitation
CSA	Central Statistics Authority
DDAEB	Dire Dawa Administration Education Bureau
DFID	Department for International Development
EDHS	Ethiopian Demographic and health survey
HEWs	Health Extension Workers
JMP	Joint Monitoring Program
KAP	Knowledge, Attitude and Practice
M and E	Monitoring and Evaluation
MDG	Millennium Development Goal
MOE	Ministry Of Education
MOH	Ministry Of Health
MOWE	Ministry Of Water and Energy
ODF	Open Defecation Free
OWN-P	One WASH National Program
RHB	Regional Health Bureau
REB	Regional Education Bureau
RWSS	Rural Water Supply and sanitation
SPSS	Statistical Package For social Science
SWAP	Sector Wide Approach Program
UNICEF	United Nation International Children's Emergency Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

ABSTRACT

Back ground

Inadequate school WASH facilities and poor WASH practice is a major problem in developing countries and remains high risk behaviour among primary school going children. It plays major roles in the increased burden of communicable diseases and many outbreaks of gastrointestinal infections that have been associated with primary schools..

Objective: To assess factors influencing water, sanitation and hygiene (WASH) practice among second cycle primary schools students in Dire Dawa Administration from April 16 to 26, 2015.

Methodology: Across-sectional study was conducted by using quantitative data collection methods to collect data by using questionnaire and observational checklist. Source population was all second cycle primary schools students in Dire Dawa Administration; and study population was all second cycle primary schools students in randomly selected primary school in the study area enrolled in 2014/15. The sample size of second cycle primary schools students was calculated to be 845 and the sample size of second cycle primary school was 12.

A structured and pre-tested questionnaire was administered to assess pupils' knowledge; attitude and hygiene practice towards WASH and observational check list was used to assess the status of WASH. Twelve trained data collectors (HEWs) and two supervisors (Environmental health professionals) were participated in data collection. Data was analyzed by using SPSS software. Frequency table was used. Bivariate method was used to classify frequency distribution of student's knowledge and attitudes according to appropriate WASH practice. Odd ratios (OR) and 95% confidence interval was calculated by using logistic regression.

Result: Out of twelve primary schools, three (25%) primary schools were classified as having good WASH status. Out of the total study subjects, 695(85.3%), 679(83.3%) and 509(62.5%) classified as having good knowledge, attitude and practice towards WASH, respectively. The study found that the types of the school students learn in(AOR=2.845, 95%CI=(1.408-3.775));knowledge on the importance of using toilet(AOR=3.2771, 95%CI=(1.540-4.976)); and attitude on human feces contain germs(AOR=1.561, 95%CI = (1.095-2.225)), attitude on open defecation causes germs to spread(AOR=1.926, 95%CI=(1.971-2.765)) and attitude on drinking with shared cup can be transmitting diseases(AOR=1.580, 95%CI=(1.082-2.307)) were significantly associated to WASH practice.

Conclusion &Recommendation: This study has showed that types of school, knowledge, and attitude were associated with WASH practice. Most of the primary schools WASH status was poor and majority of the students had poor WASH practice. Therefore it`s recommend that to form/encourage/support health club in the school to teach /demonstrate WASH practice by providing well–designed and well-located facilities to improve WASH practice among second cycle primary school students in Dire Dawa administration.

1. INTRODUCTION

1.1. Back Ground

Schools are a learning environment for children. It is in school that children gain knowledge that influence and stimulate changes in their attitude, practice and develop life skills. One of the key schools facilitates that provide such changes are water supply, sanitation and hygiene (WASH) facilities that children use daily. School children in many ways are seen as agents of change to the community, and this has paramount significance; first these changes are brought in their school, and then at homes and finally in their communities (MOE et al., 2010).

The importance of WASH in maintaining health has been recognized for centuries with the sanitary revolution in the 19th and early 20th century considered to play a vital role in reducing illness and deaths from infectious diseases in industrialized countries (Mckeowin and Record, 1962; Preston and vandewalle, 1978).

In 1977, the UN conference in Mar del Plata (Argentina) recommended that the 1980s should be proclaimed the "international drinking water supply and sanitation decade (IDWSSD)". The aim of the decade was for all countries to achieve hundred percent coverage in water supply and sanitation by 1990. Although generally the provision of services did increases; in many countries the increase in sanitation facilities could not keep pace with the rising population ,that is, the number of people un served continued to raise (DFID,1998).

The proportion of the world population with access to improved water supply has increased from 77% in 1990 to 87% in 2008 while access to improved sanitation has increased at a lesser rate than that for water supply, from 54% in 1990 to 61% in 2008. Over a billion people in the world still practice open defecation with over 800 million of these living in just 10 countries. The highest levels of open defecation are found in south Asia (44%) and sub-Saharan Africa (27%) (WHO/UNICEF JMP, 2011).

In Africa more than 65% of the school children had poor WASH practice because 53% do not have access to safe water, 74% lack improved sanitation, and only 22% have received any kind of training. In Africa alone, people spend 40 billion hours every year, just

walking for water (WHO/UNICEF JMP, 2004).For instance in Africa urban water supply coverage is 81% and sanitation coverage is 42%; while the rural water supply coverage is 46% and sanitation coverage is 24%. These imply that there is a large coverage gap between urban and rural areas of Africa (Fewtrell et al., 2005).

Sub-Saharan Africa which accounts 11% of the global population, nearly half of all deaths occur among school children (48.8%) because of poor WASH practice that caused by inadequate WASH facilities/services (Zomerplaag and Mooijiman, 2005). This is the poorest region of the world, and not surprisingly it also is the area where access to safe water and effective sanitation is the lowest. Other disparities also apparent: more than 80% of those lacking access to safe water and sanitation live in rural areas of sub-Saharan Africa and south Asia (World vision, 2010).

Ethiopia has one of the lowest WASH coverage in Africa, even though the country has sound policies and strategies for WASH, around 62 million people live without sanitation provision, especially in rural areas most people are still practicing open defection (MOH, 2004). As a result of concerted effort, Ethiopia has met MDG goal 7c of improving access to safe drinking water to 57% of the population(from 1990 estimate of 14%) and made some progress towards access to basic sanitation by reaching 28% of the population in 2014 from 3% baseline of 1990 (MOH, 2015)

Sanitation coverage of Ethiopia is very low and most of the population still practicing open defecation, and proportion of primary schools with adequate water supply are 30% and sanitation facilities are 20% (Adams John et al., 2009).The National WASH inventory conducted in 2012 revealed that the water supply and sanitation coverage for primary schools across Ethiopia is 31% and 33% respectively(UNICEF-Ethiopia,2014).In Dire Dawa Administration of the total 103 primary schools only 36% have access to water supply,38% have access to sanitation facilities and 25% have access to hand washing facilities. Generally all primary schools have very poor WASH facilities when compared to secondary schools (DDAEB, 2014).

1.2. Statement of the Problem

Every year, millions of the world's poorest people die from WASH-related disease caused by inadequate water supply and sanitation services that leads to poor WASH practices, hundreds of millions more suffer from diarrhea or parasitic worm infections that ruin their lives. Women and school children are the main victims (DFID, 1998).

Poor sanitation, water scarcity, inferior water quality and in appropriate hygiene behavior are disastrous for infants and school children's and are a major cause of mortality, morbidity and disability. Disease spread in cramped (crowded) space with limited ventilation, where toilets are not available or disrepair, too often, schools are places where children become ill (Adams John et al.,2009).

According to the WHO, "millions of people become ill and thousands die from preventable food- and waterborne diseases annually". About 48 million Americans become sick due to contaminated food and water each year. Shigellosis is responsible for 80 million cases of dysentery and 700,000 deaths due to dysentery in the world. WHO suggests several preventive keys for safe food, including keeping the food clean, separating raw and cooked foods, keeping food at safe temperatures, and using safe water and raw materials. Most studies have indicated that the knowledge about food- and water borne outbreaks is low especially in young age groups (WHO, 2012).

In developing countries, there is significant anecdotal (unreliable) evidence in gray literature implied that schools lack adequate water and sanitation, since the governments rarely gather gender disaggregated information on school WASH facilities. There is lack of reliable data on WASH status and practices of the primary schools. The failure to consider the importance of WASH in school and other spheres has been highlighted as a major public health risk (Bartram, 2008)

Diarrheal diseases and helminthes infections force many school children to be absent from school. WHO estimated that 1863 million school days would be gained due to absence of diarrheal illness if everyone in the world had access to improved water supply, adequate sanitation and hygiene services that enhance good WASH practices (WHO, 2004).Infection of school children with soil transmitted helminthes (STH) such as hook worms, round worms and whip worms are directly reduces cognitive potential of school

children, and intricately under mines schooling through absenteeism, attention deficit and early dropout. It causes physical and intellectual growth retardation (Bethony et al., 2006).

WASH-related diseases are a huge burden in developing countries. It is estimated that 47% of children between the age 5 to 9 are infected with any of the three main types of soil transmitted helminthes and 300 million people are severely ill due to soil transmitted helminthes of these at least 5% are school age children (WHO, 2003).It is estimated that about 1.8 million people die every year from diarrheal diseases, and 3900 children die every day from diarrheal diseases. WHO estimated that 88% of diarrheal disease is caused by unsafe water supply, inadequate sanitation and inappropriate hygiene behavior (WHO, 2004).

In south East Asia the proportion of primary schools that have adequate sanitation facilities, hand washing facilities and water sources (particularly in some low- and lower-middle-income economies) remain significantly small. In Viet Nam 88% of primary schools do not have adequate sanitation facilities, nearly 16% of primary schools did not have a water source and about 65% of the schools did not have hand washing facilities. In Timor-Leste 47% of primary schools do not have adequate sanitation facilities and 31% of primary schools did not have a water source. In Lao PDR 76% of primary schools do not have adequate sanitation facilities and 43% of primary schools did not have a water source. In Cambodia 22% of primary schools do not have adequate sanitation facilities and 39% of primary schools did not have a water source (UNICEF, 2013).

A previous hand hygiene studies have indicated that children with proper hand washing practices are less likely to report gastrointestinal (23.5%) and respiratory (59.5%) symptoms(Lopez-Quintero et al., 2009).Hand washing with soap has been reported to reduce diarrheal morbidity by 44% and respiratory infections by 23% (Ejemot et al., 2008). However, study conducted in Kenya to assess school WASH facilities reported that only 5 out of 100 schools had soap available for children. Less than 2% of children (only 21 out of 951) were observed to wash their hands with soap (Njunguna et al., 2008).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 only 17% of participants washed their hands with soap after using the toilet, while 45% used only water (Curtis et al., 2009).

The three key hygiene practices known to most effectively reduce hygiene related diseases are drinking safe water; consistent use of sanitary facilities; and hand washing with soap (Mulubirhan Assefa and Abera Kumie 2014). A national survey in Malawi indicated that unprotected water source is still used as the main drinking water source in 18.5% of schools,33% of the school have poor sanitation facilities, and 4% of schools have no sanitation facilities. The situation on hygiene is rather alarming. Lack of resources, namely soap and water, as well as inadequate sanitation facilities may be the main reasons why children do not wash their hands. Only 4.2% of primary schools have hand washing facilities in use and with soap available, and 14% have hand washing facilities in use, but without soap; and a full 81% of schools do not provide the learners with any facilities for washing hands while in school (Sande, 2009).

Improve food hygiene, which may prevent many diarrhoea deaths, especially in hot climates where food hygiene is difficult to maintain. A recent prospective cohort study in Bangladesh suggests that hand washing with soap before preparation of children's food may be particularly effective in reducing diarrhoea. The study also found that both high baseline faecal contamination of weaning foods and large reductions in contamination following a targeted hygiene intervention. The overall mean score of knowledge, attitude, and practice of the study subjects was 28.17 (SD = 4.58), 37.07 (SD = 4.39), and 21.31 (SD = 3.81), respectively (Luby et al., 2011).

A study in Palestine reported that water supply, sanitation and hand-washing facilities are not available in sufficient numbers to meet national and international standards in majority of primary schools. The schools' environment is not always devoid of rubbish more than 37.05% of schools have rubbish around the school and 14% of urban schools have stagnant water around the school. There are, on average, 50 students per water point nearly double the minimum national recommendation, all schools do not have enough hand-washing facilities,16.7% of the schools had not even one clean toilet and majority of toilets do not have toilet paper. This study also showed that more than 30% of the students had poor knowledge, almost half (50%) of students had poor attitude and 40% of students had poor practice of WASH (UNICEF Palestine, 2011).

A cross-sectional study in Nigeria showed that majority of respondents had good knowledge and attitude to hand washing; 93.0% and 98.7% respectively. However, less than a quarter of the respondents (21.7%) had good practice of hand washing (Asekun-

Olarinmoye, 2014).A recent study in south Sudan indicated that about 40% of the study population has poor practice on water handling, 96% of the population practice open defecation, 50% of the respondents have poor hand washing practice during key times, 93% of the respondents have poor knowledge on the importance of hand washing, 80% of the total respondents have poor practice on solid wastes management, 70% had a household member who suffered from diarrhea and 32 % of the respondents have poor knowledge on the causes of diarrhoea (ACF-USA, 2012)

Millions of Ethiopians still lack improved water supply and sanitation facilities and very few people regularly wash their hands with soap and water at critical times. According to the recent report of WHO/UNICEF JMP Ethiopia is among the 45 countries in the world with sanitation coverage of under 50% and one of 27 countries in the world where more character of the population still practice open defecation (MOH, 2013).

The existing WASH facilities for many of the schools in Ethiopia are poor. Most school latrines are filthy and not clean, lack safe water supply, lack hand washing facilities, lack proper waste disposal system, and lack hygiene education. These conditions are contributing to high level of disease prevalence, and create poor learning environments. There are two major causes to these problems, firstly most of the schools in Ethiopia have lack of water supply, sanitation, waste disposal, and hand washing facilities, as well as hygiene education services at all; and secondly the existing WASH facilities are not managed properly (MOE et al., 2010). Children who have adequate water supply, sanitation and hygiene facilities at school are more able to integrate hygiene education into their daily lives, and can be effective messengers and agents for change in their families and the wider community. Conversely, communities in which school children are exposed to disease risk and the families bear the burden of their children's illness (Adam John et al., 2009).

In Ethiopia poor design, construction and management of school toilet, water supply, hand washing, and waste disposal facilities are the causes of many problems such as filthy conditions, damage to structures and makes management difficult. In some cases, there are no enough toilets, no water supply and no hand washing facilities (IRC et al., 2010). In a country where outbreaks of 'Acute Watery Diarrhoea' are rife, a comprehensive package of WASH in schools is vital. The physical environment and cleanliness of a school facility can significantly affect the health and well-being of children. Nationally access to safe

water is limited, hand-washing facilities are non - existent, while toilets are either in a state of disrepair or not functional in most of the country's estimated 27,000 primary schools (UNICEF, Ethiopia, 2014)

Generally, in Ethiopia including Dire Dawa there is no studies that have specifically addressed factors influencing WASH practice among second cycle primary schools students. In study area, during school hygiene education and supervision program the school children knowledge, attitude and practice gap on WASH was observed. Therefore, this study was intended to investigate factors influencing WASH practice among second cycle primary schools students to identify the main problem and extent of the problem in relation to WASH practice, and to establish a reliable data that serve as a baseline for planning locally and nationally to improve WASH practice among second cycle primary schools students.

1.3. Significance of the Study

Regional Education Bureau, Regional Health Bureau, school teachers, stakeholders and parents may be able to improve water supply, sanitation, waste disposal, hand washing, and hygiene facilities; as well as knowledge and attitude of students that may influence WASH practice in second cycle primary schools by using this result as baseline data to design appropriate interventions.

Finally, this research may inspire other researchers who plan to conduct research in similar areas especially in primary schools among second cycle students. Therefore the finding of this study may be used as a baseline data for those who are interested in carrying out further research.

1.4. Objective

1.4.1. General

To assess factors influencing water, sanitation and hygiene (WASH) practice among second cycle primary schools students in Dire Dawa Administration from April 16 to 26, 2015.

1.4.2. Specific

To determine factors associated with water supply, sanitation and hygiene (WASH) practice

To assess Knowledge, Attitude and Practice (KAP) of school children towards WASH

To assess the status water supply, sanitation and hygiene (WASH)

2. LITERATURE REVIEW

2.1 Status of WASH in Primary Schools

Across-sectional survey carried out in Haiti (2010) to assess the WASH situation of schools revealed that Water quality has been tested at 36% of urban schools and 21% of rural village schools. Additionally, 33 schools with wells did not have a functioning hand pump and 48 out of 94 schools (51%) with water storage tanks in bad condition and 20 out of 43 wells with inspection openings did not have the opening covered or sealed properly. While 73% of 101 schools had a concrete slab around the well, only 49% of 93 schools had the area tiled and with drains and only 30% of 91 schools had a secure fence. This study also implied that only 40% rural schools had hygiene training programs as compared to 64% of urban schools. Regarding hand washing facilities, 81% of rural schools and 52% of urban schools do not had hand washing facilities. The percentage of schools where students drink from unshared cup decreases from 48% in rural areas to 34% in urban areas. Generally, 23% of primary schools were good in their WASH status while the rest 77% were poor in their WASH status (Daniela et al., 2013).

A study carried out in Dessie city, Ethiopia in 2010 to assess the status of school sanitation facilities found that traditional pit latrines were the dominant type of human waste management in the study area in which a single latrine seat to school users varied between 1:27 to 1:86 with an average of 1 latrine to 64 . The disparity in the ratio was significant by sex ($p<0.05$), females being the most disadvantaged. Only 3(30%) out of 10 schools have designated separate latrines for teachers and students. However, only two (20%) of these schools had standalone blocks of latrine located in different sites for use serving males and females. Not a single hand washing facilities was observed near or around the latrines in all the schools. The ratio of a water tap to school population varied across schools, this was on the average 1:114.Generally, 80% of the school had inadequate WASH facilities (Hassen Seid and Abera Kumie, 2013).

A survey carried out in Malawi in (2008) on 5379 primary schools shows that 1237 schools (23%), have acceptable sanitation facilities, of improved latrines at a ratio of 1:60 pupils or less. Another 14% of schools have a ratio of 61-100 pupils per 1 improved latrine, and 26% of schools have a ratio of more than 100 pupils for every 1 improved latrine. One-third of the schools (33%), have only basic sanitation facilities on site. There are also 235 schools, or 4.3%, that have been registered to offer no latrine facilities at all

for their learners. Currently there are 703 schools that use piped water, the ratio of water tap to student is 1:610 and there are 142 schools that have flush toilets in use. Out of the 703 schools that use piped water, there are only 126 that also use flush toilets. Those 126 schools represent 2.3% of all schools, or 18% of the schools with piped water about a quarter of the schools, 24.2%, have adequate quantity and quality of sanitary facilities for girls, whereas only about 1/5 of the schools, 20.7% have adequate quantity and quality of sanitary facilities for boys. It should also be noted that in 5.3% of schools there are no sanitary facilities at all for girls and there are no sanitary facilities for boys in 6.2% of schools. Out the total 4.2% of the schools have hand-washing facilities in use and with soap available, while 14.7% of schools have hand-washing facilities in use but do not have soap available at the site and 81.1% of the schools have no hand-washing facilities. Therefore, 16% of primary school had good WASH facilities and 84% had poor WASH facilities (George, 2009).

Across-sectional study carried out in Nigeria (2012) to assess the WASH program in public primary schools indicated that construction in all the schools had not kept pace with the increase in enrollment which has resulted in some schools having more than 200 pupils per drop-hole and 40% of the schools do not have separate latrines for boys and girls. The population of the schools visited range between 576 -3800 students with number of toilet facilities that ranges between 4 and 12. The ratio of toilets to students in some of the schools range from 1:70 to 1:320.Only 1 out of the 12 schools visited had functional flush water toilet facility. The toilets are gender segregated and they are always cleaned by auxiliary workers. Only 1 (10%) of the schools had hand washing points but without soaps and only 3 schools (20%) out of the 12 schools visited had drinking water points .The ratio of drinking water point to student is 1:658 (David O. Olukanni, 2013).

A Cross-sectional study conducted in Kenya in 2012 to assess WASH condition in rural schools found that there were a total of 798 sanitation facilities for students in the 62 schools surveyed (range 6–32).The majority (590; 74%) were pit latrines. The remainder was VIP (147; 18%), ecosan (4; 0) or urinals (57; 7%). Urinals were predominantly for boys (53/59) with four for girls and two for teachers. Forty-two (68%) schools had at least one urinal available for boys and three schools had a girls' urinal. Of the three schools with urinals for girls, it was noted that one school had a urinal for girls and not for boys. The number of latrines for boys was 409 (median 6, range 2–20), with 389 for girls

(median 6, range 2–15).Of 798 sanitation facilities, 563 (71%) were in good structural condition; 181 (23%) had locks on the doors and 126 (16%) had locks and were clean. The average pupil-latrine ratio was 36:1. The average ratio was 37:1 for girls and 40:1 for boys. The Kenyan national target ratio for girls was met by 25 (40%) schools and 28 (45%) met the target ratio for boys. A quarter of schools met the target criteria for both boys and girls (Kelly et al., 2014).

A nationwide survey undertaken in 2006 on school Water, Hand Washing and Sanitation (WASH) facilities in Ethiopia indicated a very low coverage, 32.5% in drinking water facilities. The same survey reported that the disparity in access by male and female pupils (latrine to students' ratio) is very wide: 1:170 for the overall, and 1:164 for males and 1:177 for females. This is much lower than the optimum student to latrine seat ratio of 1:50.The study also indicated that little attention is given to school sanitation by school authorities (UNICEF, 2014).

A study undertaken in western Kenya in 2006 suggests that in many low income settings WASH facilities at schools are frequently in bad condition and poor practice of hygienic behavior among students. These conditions can be attributed to many factors: 60% of the technology applied in the schools may be culturally in appropriate, too expensive and top down. There may be inadequate and irregular funding for maintenance. Behaviors change messages remains ineffective: 70% of the school staff and parents did not understand the urgent need for sustaining improved hygiene behavior &sanitation facilities. In short there is little universal knowledge of what works (O`Reilly et al., 2008).

A cluster randomized trial carried out in Kenya (2007/08) on public primary schools nested in three geographical strata to assess the effect of water treatment, hygiene promotion & sanitation improvement on pupils absence found that no overall effect of the intervention on absence. However, among schools in two of those that receive water treatment and hygiene promotion showed 58% reduction in odds of absence for girls (OR=0.42, CI 0.21-0.85) but no effect for boys (OR 0.88, CI0.45-1.71).In the same strata, sanitation improvement in combination with water treatment and hygiene promotion resulted in a comparable drop in absence, although results were marginally significant (OR 0.47, CI 0.21-1.05**)** (Matthew et al., 2012).

Across-sectional survey carried out in Nicaragua (2012) to assess WASH conditions in schools revealed that less than fifty percent of schools (43%) had water infrastructure at the school, including piped connections, bore holes, and wells (n=454).Of the 195 schools with water infrastructure, 51(26%) stated that the water system was damaged or not functioning properly. The highest percentage of damaged water systems was in the rural villages (35%),dispersed rural areas (23%) and urban areas (18%).Thus, out of 454 schools, only 32% had functioning water systems, while 30% had to bring water to school from an outside source, and 38% had no water at all at the schools. Water treatment followed a similar urban-rural pattern as water infrastructure, increasing from 50% in dispersed rural areas to 83% in urban areas (Tania et al., 2012).

An assessment carried out in Sierraleon in (2010) among primary schools shows that 42.25% of the schools in urban have sanitary facilities of adequate quantity and quality, however the same is true for only 23% of schools in rural. It is noted that in the urban areas 17.6% of schools have flush toilets in adequate quantities for girls, with another 10.9% having flush toilets but in inadequate numbers. Similarly there are 16.4% of schools in urban areas that have adequate numbers of flush toilets for boys, and 12.1% that have flush toilets but not enough of them. In the urban areas about 71% of schools do not have flush toilets, for either girls or boys. The results of this assessment also shows that for girls there are 679 schools, or 12.6%,that have improved urinal blocks for girls to use, and 1223 schools (22.7%) where basic urinal blocks for girls are available. In 3477 schools (64.6%) are there no urinal blocks for girls. For boys the coverage is higher: 914 schools, or 17%, offer improved urinal blocks for boys, and in 2091 schools (38.9%) are there basic urinals for boys. There are 3005 schools (44.1%) that have no urinal blocks for boys (Asse van wijk and Tineke, 2012).

Across-sectional survey carried out in Ghana (2012) revealed that as a whole, there is higher sanitation than water coverage in the study area, with 63% of schools having some sort of sanitation facilities at the school (n=410). However, 28% of schools with sanitation facilities reported that toilets are not used due to poor conditions or habits (n=260).Of schools with toilets, only 22%, 26% and 39% had lids in dispersed rural, rural village, and urban areas respectively and just 5% of all schools had toilet paper (n= 327).The majority of sanitation infrastructure at the schools was in the form of water-less latrines (70%), another 17% of schools had a latrine system which used water, 8% were on a septic-

system, only 2% were connected to a community sewer system, and 3% reporting “other”. A good proportion of the schools surveyed (79%) had Hand Washing Facilities (HWFs) available, but 17% of these schools (n=42) lack soap at their HWFs.The ratio of HWFS to student range 1:15-372, on average 1:105 (Isaac et al., 2014).

A study carried out in India in 2012 on primary schools implied that only 25% of the schools had hand washing areas that were located inside the flush toilets, although there was no soap provided. The remainder of schools (75%) had hand washing facilities (one tap, no soap) that were located at the center of the schools and were about 100 m from the toilet (Snel et al., 2014).

2.2. Factors influencing WASH practice

2.2.1 Knowledge, Attitude and Practice of WASH

A study undertaken in Angolela, Ethiopia in 2008 to assess KAP of WASH among school children indicated 52% of the students who answered ‘yes/positively’ to all the following option were classified as having good practice of WASH: Did you usually (a) Use sanitary latrine? (b) Use clean water? Did you always wash your hands (a) before eating? (b) After defecation? Knowledge about WASH was also assessed. Students who answered ‘yes’ to all the following questions were classified as having adequate knowledge of WASH : if boiling water kills germs, if water containers need cleaning and covering, and if human faeces contains germs. The study showed that 65% of the students classified as having good knowledge, and 54% of the students classified as having good attitude. Out of the study subjects 61% reported that using clean water was important, but only 51.4% of the students practiced it, and 44% of the students reported that using sanitary toilet was important, but only 30% were reported that follow this practice. Approximately, 76.6% of students know that hand washing after defecation was important, but only 15% washed their hand after defecation. The majority of the participants 99.7% know that hand washing before meals were important, but 47.6% of students washed their hands before meals. The considerably higher frequency of hand washing before/after meals among Ethiopian children may be due, in part, to the Ethiopian cultural tradition and ceremonial practice of washing hands before/after meals or the desire for clean, fresh hands before/after eating. However, only 36.2% of students who washed their hands reported using soap (Vivas et al., 2010).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that students who answered 'yes' to whether boiling water kills germs, if a water container needs cleaning and covering, and if human feces contain germs, classified as having good attitude towards WASH. Overall, 56% of the students who answered yes to above questions were classified as having good attitude towards WASH. Twenty one percent of students reported that they boiled their drinking water the day prior to the interview, 24% of the students reported that ever cleaning and covering water container, and 43% reported that use latrine/never defecate outside the toilet. Regarding the methods of protection against diarrhea and water borne diseases, 65% of the student reported that using toilet, 70% reported that using clean water, and 72.6% of the student reported that washing fruits before eating was important for preventing diarrhea and water borne diseases, but practically only 31% of the student reported that using toilet, 32% reported that using treated/boiled water, and 37% of the student reported that washing fruits before eating (Bachir, 2009).

A study carried out in India (2003/04) to assess the impact of school health education program on personal hygiene and related morbidities shows that the point prevalence of clean combed hair and cut nails were 27.6% and 29.7% respectively in 2003, which increased to 52.7% (OR 1.91, CI 1.16-3.14) and 48.2% (OR 1.63, CI 0.99-2.67) respectively in 2004 because health education on personal hygiene offered regularly for school children. The difference was statistically significant ($p<0.05$). Similarly the proportion of the children with wax in ears decreased from 10.3% to 0.9% (OR 0.09, CI 0.00-0.64). The minor ailment (a minor illness) reduced from 56.6% in year 2003 to 44.6% in year 2004(OR 0.79, CI 0.50-1.24). The morbidities related to poor personal hygiene like lice infestation and scabies also reduced significantly ($p<0.05$) (AR Dongre et al., 2006).

A study undertaken in Colombia (2007) to assess the hand washing practice of school children found that only 73.6% of the sample reported always important washing hands with soap and clean water before eating and after using the toilet. Those who practiced hand washing pointed out that they did mostly before eating (31.6%) and after visiting the toilet (14%). About 27% of students reported regular access to soap and clean water at school. A high level of perceived control was the strongest predictor of positive hand washing intentions (AOR =6.0, CI =4.8-7.5). Students with proper hand washing behavior were less likely to report previous month gastrointestinal symptoms (OR=0.8; 95%CI=0.6,

0.9) or previous year school absenteeism (OR=0.7; 95%CI=0.6, 0.9) (Lopez-Quintero et al., 2009).

A study conducted in Ghana (2006) indicates that attitudes, knowledge, and beliefs are some of the measures which are thought to be on the causal pathway to behavior. Poor knowledge and practice, and attitudes to personal hygiene has negative consequences for a child's long term overall development. The hygiene behavior that children learn at school made possible through sanitation and hygiene-enabling facilities, and play a major role in ensuring good hand washing practices. Lack of hygiene enabling facilities at schools and homes did not allow children's' to practice the hand washing knowledge they had acquired (Scott et al., 2007).

A study conducted in Ethiopia (2004) found that 60% of children surveyed did not know about the possible transmission of diseases through human waste. Awareness of health aspects of sanitation behavior is important because it determines the degree of sustainability of an intervention in sanitation. Perception strongly influences one's hand washing beliefs and practices (Abera kumie and AbeduliAli, 2005).

A study conducted by Oswald and his Colleagues (2007) in Peruvian shanty town revealed that Lack of resources, namely soap and water, as well as inadequate sanitation facilities may be two of the main reasons why children do not wash their hands and also the location of hand washing led to some pupils forgetting to wash hands. Hand washing-facilities must be easily accessible and available at all times with the right materials necessary to make the process a success (Oswald et al., 2008).

Across-sectional study undertaken to in Sudan in 2008 to assess KAP of hygiene among school children shows that of the total respondent 92.8% reported that using treated water protect from diarrheal diseases but only 32% of the student reported that always by treating water before drinking and 67.8% of the student reported that they treat drinking water prior to the date of interview, 70% of the respondent had reported that water container needs cleaning and covering,74% of the student reported that human feces contain germs, and 81.9% of the students reported that boiling water kill germs. Among the school children 73% was reported to defecate in latrine and out of these, 6% reported always to 'how frequent use latrine'. Also, the study showed that 70.6% of the respondent reported to execrate in latrine the day prior to data collection (Alian et al., 2010).

A study carried out in India in 2012to assess WASH practice among primary schools students indicated that more than 75% of the respondents reported washing fruits before consumption for reasons including the removal of bacteria (54%) and that the fruits were handled by many different people (26%). The other reason was for the removal of dust particles from the fruits (20%). On other hand, some of the students reported that not washing fruits before eating because of lack of water (35%); the water tap was far away (30%); the fruit looked clean (20%) and laziness (15%) (Snel et al., 2014)

Across-sectional study carried out in South Africa in 2010 to assess KAP of primary school students on WASH shows that 2,236 students were interviewed, in relation to hygiene, about 91.40 ± 1.16% of the respondents in the study reported that they were concerned about hygiene, of which 53.20 ± 2.07% were always concerned, 40.40 ± 2.03% sometimes concerned and 6.40±1.01% had no concern at all. With regard to the behavior of washing fruits before eating, 85.3±1.70% of the student reported that washing fruits was important for preventing some WASH-related diseases but 41.80 ± 1.60% of the respondents reported that they wash fruits before eating. Adequate knowledge was defined using the reply to the following questions: Do you know the importance of (i) Using clean/potable water? (ii) Using clean toilet? For preventing WASH-related diseases such as diarrhea, water borne diseases, intestinal worm and soon. When it is important to wash your hands (i) before eating? (ii) After using toilet? For students replied yes to all the above questions/options their knowledge was defined as adequate. Out of the total study subject surveyed,88± 1.60% reported that hand washing was important before eating, and 78 ± 2.10% reported that hand washing was important after eating. Of the total study subjects, 85.4±1.09% reported using clean water, and 87.9±2.20% reported using toilet was important for preventing some WASH-related diseases. Overall; 60.6±1.34% was classified as having adequate knowledge of WASH. In addition, the study also showed that 51.8±1.05% and 34.9±2.01%) of the students were classified as having good attitude and practice of WASH, respectively (Jerry and Jabulani, 2013).

A study carried out in Bangladesh in 2011 to assess KAP of primary school students indicated that students not using hand washing facilities in schools because very far (18%), lack of water (35%), lack of soap (52%) and very crowded (4%).The study showed that 65% of the students reported hand washing was importance after using toilet (Risk Ratio /RR) 1.5; 95%CI 1.0, 2.1) but only 12% of the students washed their hands after using

toilet and 78.4% of the students reported hand washing was important before eating (RR 1.4, 95%CI 1.2, 3.6) but only 25.3% of the students washed their hands before eating. Regarding ways of preventing some WASH-related diseases, 65% of the student reported that using potable water, 50.4% reported using sanitary latrine, 68% reported eating well cooked food and 77.3% of the student reported fruits that look clean needs to be washed before eating, but only 36% had wash fruits before eating, 48% used clean water, 33% used toilet, 30 % eat well cooked food and. Regarding the school toilets, 70% of the student reported that refuse to use school toilet because school toilets are dirty and smells bad, of these 32,8% of the students defecate/urinate outside the school toilets and 26% of the students defecate/urinate on the streets (Hoque, 2013).

Across-sectional study undertaken in Mereb, Ethiopia in 2012/13 were grouped Children according to whether positive or negative hygiene behavior, more than half of the children were aware on hand washing and water handling accounts for 58.9% and 52.7%, respectively. Out of the total study participant 89% reported that human feces contain germs. The majority, however, 80.5% of the respondent was reported not aware on latrine utilization. The study indicated that 75.2% of the respondent had reported that water container needs cleaning and covering but 42.2% of the study subject reported never touch drinking water by dirty hand. Out of those 85% who reported boiling kill germs only 67.8% of the student reported that they boiled their drinking water the day prior to data collection.Overall,among those who have awareness about water handling 71.6% had practiced positive hygiene behavior and while 50.8% of those not aware had reported negative hygiene behavior. Out of 528 students, 61.7% students had positive hygiene behavior (Mulubirhan Assefa and Abera Kumie, 2014).

A survey carried out in Belize (a country on the Caribbean coast of central America) in 2009 to assess KAP of primary school students indicated that almost all students (98%) reported that it is important to wash hands with water and soap before eating or after using the toilet but only 38% washed their hand before eating and 18.6% washed their hand after using toilet. Out of the total study subject, 96 % of students reported that hand washing reduces the chance of getting diarrhea, 60% of the student reported hand washing reduce other diseases/infection, and 54% of the student reported hand washing reduces stomachache.Overall, 91% of students agree that not washing hands with water and soap

before eating can lead to serious diseases, and 86% agree that using an unclean toilet can lead to diseases (David, 2009).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that of the student attitudes towards sanitation of schools. Out of the total study subjects, 40.2% refuse to use school toilet. Students who reported that they don't use school toilet were asked about reasons for not using it. Overall, 803(68%) reported that they don't use it because it's dirty, 38% reported that it smells bad, and 69% reported that there is no privacy and also 58% of students reported that use of school toilet facility is difficult. Concerning the place where students go to urinate/defecate, 27% reported home while 184(23%) reported streets or yards. Moreover, the study indicated that less than half of students agree with the following statements "Playing near the garbage and waste water ponds is no danger" and "fruits that look clean do not need to be washed before eating"(44% and 42% respectively). Overall,3.3% wash their legs daily, 45% wash their clothes weekly, 83.2% clean their teeth always, 43% of the students clean their hair monthly, and 100% of students take bath every other days (Bachir, 2009).

A survey carried out in Sierraleon in 2010 indicated that 75% of the student reported that they have learned about hygiene and cleanliness from home (75%), at school (56%), via radio or television (36%), at health facilities (8%) and friends (5%) as their source of knowledge. Overall, 94% of students reported that their schools provide health hygiene education. Regarding the frequency of receiving health hygiene activities, 42 % reported once per week, 28% reported once or twice per week, and 17% reported every day (Asse van wijk and Tineke, 2012).

2.2.2 Location of schools

A study carried out in Bangladesh in 2011 to assess KAP of primary school students indicated that the percentage of those students who wash their hands at school is higher among urban primary schools than rural primary schools (47% and 19% respectively).over all, 88% of the students who do not use hand washing facilities in schools reported that very far (38%), lack of water (35%), lack of soap (52%) and very crowded (4%) as the main reason for not wash their hands at school. Out of the total students 57% of rural primary school students and 36% of urban primary school students reported that lack of soap as the main reason for not washing their hands at school while 60% of rural students

and 34%of urban students reported that lack of water as the a main reason for not using hand washing facilities (Hoque, 2013).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that 40.2% of students refuse to use school toilet which is higher among students in urban schools than rural schools (42% and 38% respectively).The primary reason for not using school toilet, 85.7% of urban school students and 65.7% of rural school students reported that toilets are dirty followed by 41.7% of urban school students and 28.1% of rural school students reported that smells bad.Overall, 32.3% of the students reported that they urinate/defecate outside school toilet of these 19.8% was urban school students and 51.1% was rural school students that reported urinate or defecate outside school toilets. As expected, students whose schools have bucket latrine, those in schools with dirty was observed on the toilet floor, and those in schools where toilets have no doors are the most likely to report urinating/defecating outside school toilet (43%, 52%, and 54% respectively).Rural school students are less likely than urban school students to report agreement with the statement playing near the garbage and waste water ponds is no danger (40.9% and 42% respectively) (Bachir, 2009).

A study undertaken in Colombia (2007) to assess the hand washing practice of school children found that a significant association between the washing of hands before eating and location of schools implied that urban schools were more concerned about washing of hands (RR = 0.62, 95% CI 0.55 to 0.69). For washing of hands between the urban and rural schools was variable, 70.3% (urban) and 29.7% (rural) but was above 65% within the schools (rural or urban). Those that had water and soap were three times more likely to wash their hands before eating and after visiting the toilet (Lopez-Quintero et al., 2009).

Across-sectional study undertaken to in Sudan in 2008 to assess KAP of hygiene among school children shows that 272 (70.6%) of the urban respondent and 153 (35%) of the rural respondent reported to execrate in latrine the day prior to data collection. Of the school children, from rural schools 370(70%) and from urban schools 234 (26%) were not washing their hands after defecation and after eating. However, 463 (87.7%) reported they usually wash hands and 450(85.2%) wash their hands the day prior the data collection, 513 (97.2%) of the school children reported that they did not use soap at critical time (Alian et al., 2010).

Across-sectional study carried out in India in 2007 to assess impact of inadequate WASH and poor level of hygiene perception indicated that a significant association between the concern about the hygiene and location of schools, that is urban schools were more concerned about hygiene (RR = 0.89, 95%CI 0.81 to 0.98). For concern about hygiene between the urban and rural schools was variable, 63.8% (urban) and 36.2% (rural) but was above 90% within the schools rural or urban. Regarding the importance of being clean, 98.4% of urban school students and 97.5% of rural school students reported that being clean is good for health, 67.6% of urban school students and 51.9% of rural school students reported that being is good to avoid smell, and 1.3% of urban students and 0.2% of rural students reported that not good to be clean. Urban school students reported that use soap to wash their hands (97.2%) and complete body (94.2%) whereas rural students reported that use soap to wash their hands (73.8%) and complete body (88%) (Nath, 2009).

Across-sectional study carried out in South Africa in 2010 to assess KAP of primary school students on WASH shows that 2,236 students were interviewed, of which 34.90 ± 1.98% of the respondents were from rural schools and 65.10 ± 1.98% from urban schools. A majority of urban students about 76.7 ± 1.75% of the of them knew at least one water borne disease while the other 23.2 ± 1.75% had no clue as what was meant by water borne disease. However, about 65.0 ± 1.97% of urban students did not know about the route of transmission of water borne diseases. There was disparity in the level of knowledge about water borne diseases with 60.7 ± 2.31% of the respondents from urban schools were more knowledgeable about waterborne disease in comparison to 39.3 ± 2.31% of respondents from rural schools (Jerry and Jabulani, 2013)

A study carried out in Nigeria in 2006 on primary schools indicated that 33.7% of students reported that drinking water is never available at school of these 54% of rural students and 20% of urban students reported that drinking water is never available at schools. Therefore, 15% of students reported that they get drinking water from their home of those23% were urban and 4% were rural primary schools students. Regarding hand washing, 43% of the student wash their hand before eating and after using toilet out of these 41%were urban primary school students and 23% were rural primary school students reported that wash their hands with water and soap before eating and after using toilet. Generally, 53% of urban school students and 31% of rural school students considered as having good practice WASH (Ashank et al., 2008).

A survey carried out in Belize(a country on the Caribbean coast of central America) in 2009 to assess KAP of primary school students indicated that students from urban schools were more likely than those from rural schools to report the importance of washing hands with water and soap before eating(96.5% and 95.6% respectively). Overall, 97.3% of students from rural schools agree that not washing hands with water and soap before eating can lead to serious diseases while 87.3% of students from urban schools agree with this statement. If hands look clean then you don't need to wash them before eating. Rural school students are more likely than urban school students agreed with this statement (41% and 18% respectively) (David, 2009).

A study carried out in India in 2012 on primary schools students indicated that no significant association between the washing fruits before eating and location of schools while urban schools were more concerned about washing of fruits (RR = 1.05, 95% CI 0.97 to 1.15). For washing of fruits before eating between the urban and rural schools was variable, urban (65%) and rural (35%) but was above 80% within the schools (rural or urban) (15%).Over all the study implied that 64% of students from urban school and 15% of students from rural schools have good WASH practice (Snel et al.,2014).

A survey carried out in Sierraleon in 2010 on primary school showed that the student have learned about WASH from home (75%), schools (56%), radio or television (36%), health facilities (8%) and friends (5%).By urban-rural residence, students residing in urban areas are more likely to report home as a source of knowledge than those in rural areas (78% and 72% respectively). students in urban areas are more likely to report school as a source of knowledge than those in rural areas (57% and 55% respectively).(Asse van wijk and Tineke, 2012).

2.2.3 Type of schools

A survey carried out in Belize(a country on the Caribbean coast of central America) in 2009 to assess KAP of primary school students indicated that90.3% of students from private schools and 91.5%of students from public school agreed with the following statements "Not washing hands with water and soap before eating can lead to serious diseases". Public school students are by far more likely than private school students to report agreement with these statement if hands look clean then you don't need to wash them before eating" (31% and 5% respectively). Students from public schools are more

likely than private school students to report agreement with these statements “It is ok to drink from the same glass with my friends” and “Washing hands with water only after using the bathroom is enough to protect from diseases” (43.4% and 30.9% respectively).Generally, 20% of private school students classified as having good WASH practice and 16% of public school students classified as having good WASH practice (David, 2009).

A study carried out in Bangladesh in 2011 to assess KAP of primary school students indicated that percentage of students who do not use the hand washing facilities was higher in public schools than in private schools (69% and 26% respectively). Public school students reported that very far (12%),lack of water (39%),and lack of soap (49%) as the main reason for not using hand washing facilities where as private school students reported that very far (70%), and very crowded (21%) as the main reason for not using hand washing facilities. Refusal to use school toilets is higher among students in public schools than private schools (62% and 43% respectively) (Hoque, 2013).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that student attitudes towards school toilet, 42.4% of the students were from public schools while 27.4% of the students were from private schools reported that refuse to use school toilets. The percentage of public school students reported that dirty, smells bad and no privacy as the main reason for not using school toilets were (69.6%, 39.6% and 7% respectively). The percentage of private school students reported that dirty, smells bad and no privacy as the main reason for not using school toilets were (54.2%,18.8% and 6.3% respectively).Moreover, 46.5% of the students from public schools reported that urinate/defecate on street/yard but none of private school student reported that urinate/defecate on street/yard. The percentages of public school students are by far more likely than private school students to report agreement with the statement playing near the garbage and waste water ponds is no danger and fruits that look clean do not need to be washed before eating (31% and 5% respectively) (Bachir, 2009).

A survey carried out in Sierraleon in 2010 indicated that 44.3% of the students received hygiene education at school. Students in public schools were more likely than those in private schools to report that they learn about general cleanness and personal hygiene at school (58% and 42% respectively).Regarding the frequency of receiving hygiene

education, 44.7% of public school students and 45.2% of private school students received hygiene education once per week. Regarding timing of receiving hygiene education, 88.7% of students receive it during regular class of these 88.9% were public schools and 87.2% were private school students. Fifteen percent of public school students reported receiving health hygiene education during breaks compared with only 2% of private school student (Asse van wijk and Tineke, 2012).

A study carried out in Nigeria in 2006 on primary schools indicated that one-third of the students reported that drinking water is never available in their schools. The percentage was higher among public schools students than private schools (37% and 17% respectively). On the other hand, 43% of the students reported that they drink from water points at school of these 42% were public school students and 49% were private school students. Sixteen percent of study subjects reported that they get drinking water from their home of these 12.9%was public school students and 30.9% were private school students. Regarding water drinking habits, overall, 34% of students reported that use their hands to drink water of these 36% were public school students and 6.7% were private school students. Moreover, 26% of public school students and 38% of private school students reported that use shared bottle/cup to drink water where as 28% of public school students and 50% of private school students reported that use unshared cup/bottle to drink water (Ashank et al., 2008).

2.2.4 Gender of students

A study carried out in India in 2012 on primary schools indicated that there is no significant association between the washing of hands before eating and gender (female or male), (RR = 1.01, 95% CI 0.97 to 1.05). For washing of hands before eating between the gender was variable, 46.5% (male) and 53.5% (female) but was above 78% within the gender (male or female).Out of the students who uses their hand to drink water 56% were male and 44% were female. Female students were more likely uses soap than male students to wash their hands, body and clothes (58% and 42% respectively) (Snel et al., 2014).

A study carried out in Nigeria in 2006 on primary schools indicated that no significant differences between male and female students since more than 82% of the students not wash their hands at schools. Female students were more likely wash their hand with water and soap before eating and after using toilet than male students (52% and 48%

respectively). Female students wash their complete body/take bath frequently than male students (54% and 46% respectively). Seventy percent of male students help in bringing water to school but only 30% of female students help in bringing water to school. On other hand 63% of female students help in cleaning class rooms and toilets whereas only 37% of male students help in cleaning class rooms and toilets (Ashank et al., 2008).

Across-sectional study carried out in South Africa in 2010 to assess Kapok primary school students on WASH shows that 2,236 students were interviewed, of which 46.30 ± 2.07% of the respondents were male while (53.70 ± 2.07%) of the respondents were female. Regarding school toilet usage, 36 ± 2.07% of male students and (38±2.07%) of female students reported that the school toilets were clean and always they use it. In all the schools, it was found that there was no soap provided for hand washing nor was learners encouraged to bring their own soap. About 78.90 ± 1.69% of male respondents and80.2± 1.69% female respondents felt that teachers were not doing enough in terms of informing learners about practicing safe hygiene and sanitation. The main reason given was that the status of their toilet was generally clean, but in very few schools the toilets were dirty and this might discourage the learners from using the toilets. Regarding the cleaning habit, female students were less likely cleans their teeth than male students (33±2.03% and 67±2.03% respectively) whereas male students were less likely clean their hair than female students (35±2.08% and 65± 2.08% respectively) (Jerry and Jabulani, 2013).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated Students who reported that don't use school toilet were asked about reasons for not using it. Overall, 70% of male students and 66% of female students reported that they don't use it because it's dirty; 33% of male students and 42% of female students reported that it smells bad; and 6.9% of male students and 7% of female students reported that there is no privacy. Also, male students were more likely to report that they urinate/defecate outside school toilets than female students (37% and 27% respectively).Based on gender variation, 96.2% of male students reported that never washing their legs daily where as 97.6% of female students' reported that never wash their legs daily. The percentages of male students who never clean their hairs higher than female students (62.3% and 47.7% respectively).Overall, 83.2% students reported that always clean their teeth. The percentage of female students who always clean their teeth were more likely than male

students (86% and 81% respectively).The tendency of cleaning teeth before going to sleep and after eating is higher among female students than male students (Bachir, 2009).

2.2.5. Age of students

A study carried out in Nigeria in 2006 on primary schools indicated that the percentage of the students who get drinking water from their home is higher among students less than 11 years old (45.2%) than those 11 years or older (24.9%). Eleven years or older students more likely get drinking water from water point at school than student aged less 11 years (43.1% and 36.8% respectively).Student less than 11 years old were less likely wash their hands with water and soap before eating than students aged 11 years or older (84% and 92% respectively).Similarly, students aged less than 11years were less likely wash their hands with water and soap after using toilet (54% and 62% respectively) (Ashank et al., 2008).

A study carried out in Bangladesh in 2011 to assess KAP of primary school students indicated that 20.2% of the student aged less 9 years, 38.9% of students aged 9 -10 years old, 27.2% of students aged 11 - 12 years old reported that use hand washing facility. Overall, 85% of the students do not use hand washing facilities in schools of these 18% reported that very far, 35% reported that lack of water, 52% reported that lack of soap and 4% reported that very crowded as the main reason for not using hand washing places at schools. Among the students reported very far as the main reason for not using hand washing facilities, 14.3% were less than 9 years old, 18.5% were 9-10 years old, and 10.3% were 11-12 years old. Among the students reported lack of water as the main reason for not using the hand washing facilities, 42.9% were less 9 years old, 27.2% were 9-10 years old, and 51.7% were 11-12 years old. Among the students reported lack of soap as the main reason for not using hand washing facilities, 42.9% were less than 9 years old,50.6% were 9-10years old, and 62.1% were 11-12 year old. Among the students reported hand very crowded as the main reason for not using the hand washing facilities,3.7% were 9-10 years old, and 3.4% were 11-12 years old (Hoque, 2013).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that the percentage of the students who get drinking water from their home is higher among students less than 13 years old (30%) than those aged 13 or older (9%). Overall, 43% get water from water points at schools of these 28.6% of the student aged

less than 13 years. The tendency of cleaning teeth before going to sleep (55.4%) and after eating (58.9%) is higher among students less than 13 years old than students aged 13 years or older clean their teeth before going to sleep (28.9%) and after eating (35.2%) (Bachir, 2009).

A survey carried out in Sierraleon in 2010 indicated that student whose school provides hygiene education, 5.7% aged less than 10 years, 5.8% aged 10-13 years and 8.7% aged 13 years or more. Regarding frequency of receiving health hygiene education, 26% of students aged less than 10 years received hygiene education once per week of these 83% received during class, 2% received during morning assembly and 35% received during school activities. On other hand, 17.7% of students aged 10-13 year received hygiene education two times per week of these 88% received during class, 1.9% received during morning assembly and 26.3% received during school activities. Moreover, 15.7% of students aged 13 or older received hygiene education once per month of these 89.2% received during class, 1.7% received during morning assembly and 15.4% received during school activities (Asse van wijk and Tineke, 2012).

A survey carried out in Djibouti in 2009 to assess KAP of primary school students indicated that students aged 13 years or older rated school toilet, water sources, basin/places for drinking water, school playground , class room, and street surrounding the school as clean (15%, 45%, 65%,55.7%,47.3% and 33% respectively).On the other hand student less than 13 years rated school toilet, water sources, basin/ places for drinking water, school playground, class room, and street surrounding the school as dirty (10%,41%,35%,43.7%,41.3% and 23% respectively). Students aged 13 years or older described water facilities, toilets and hand washing facilities as easy to use (18%,14% and 12% respectively) whereas student less than 13 years described water facilities, toilets, and hand washing facilities as difficult to use (42.6%,61.7% and 57% respectively). Overall, 39% of students mentioned that they cut their nails weekly, 26.8% cut their nails monthly and 32.4% of the students reported that they never cut their nails. The percentage of students who cut their nails weekly is higher among students less than 13 years old than students aged 13 or older (41.5% and 30.7%% respectively).Students less than 13 year were less likely cleaning their hair weekly than students aged 13 or older (31.7% and 42% respectively) (Bachir, 2009).

A survey carried out in Belize (a country on the Caribbean coast of central America) in 2009 to assess KAP of primary school students indicated that students aged less than 14 year reported that washing hands with water and soap reduces the chance getting diarrhea (100%), reduces the chance of getting other diseases (83.9%), keep hand clean (60.7%), reduces stomach ache (60.7%) and important for religious beliefs (19.6%). Students aged 14 or older reported that washing hand with water and soap reduce the chance of getting diarrhea (95%),reduces the chance of getting other diseases (60%), keep hand clean (41.7%), reduces stomach ache (45%) and important for religious beliefs (38.3%). Therefore, children aged 14 or older were more likely reported that washing hands with water and soap is important for religious belief than students aged less than 14 years (38% and 19.6% respectively) (David,2009).

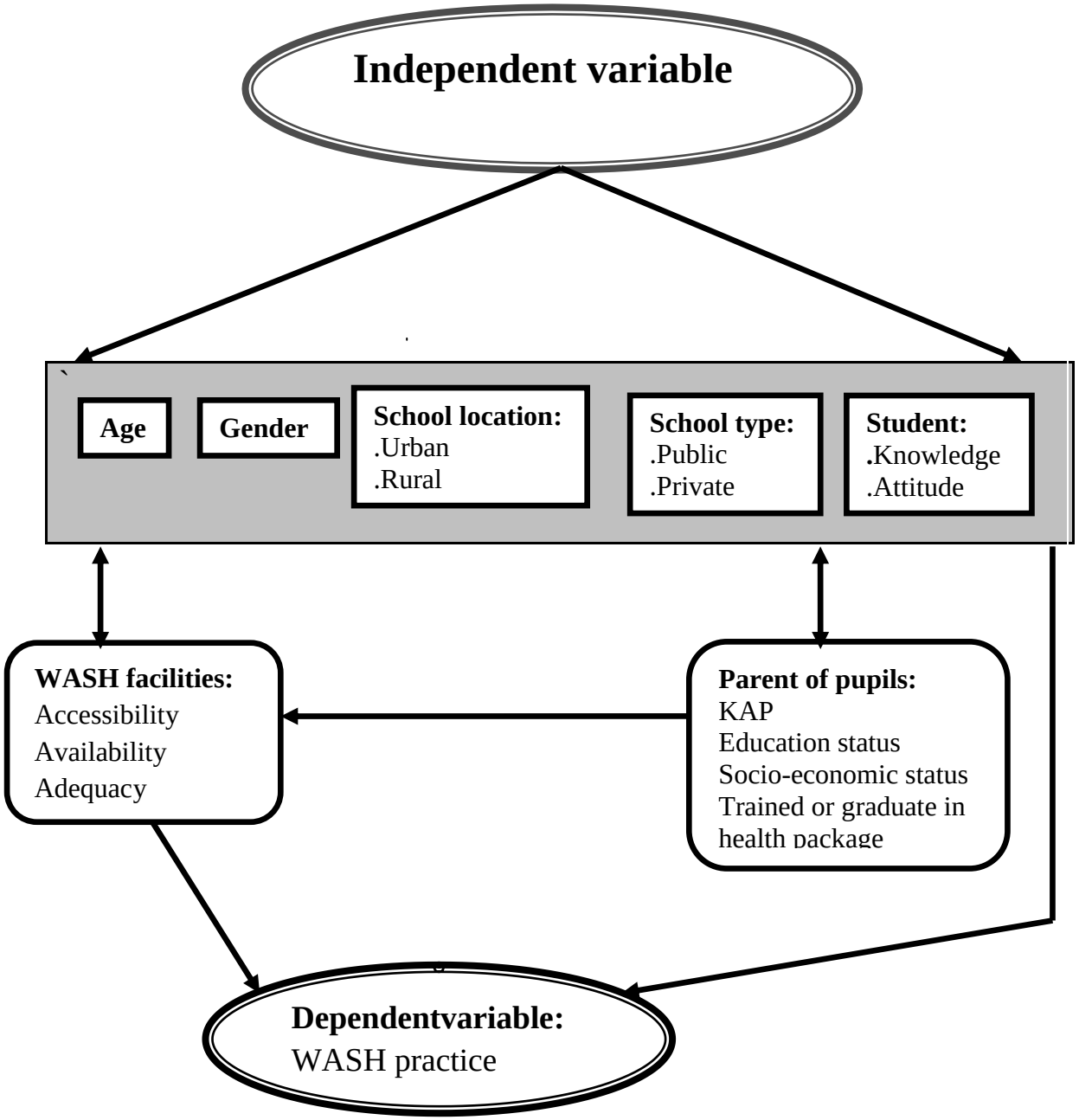


Figure 1 Conceptual Framework

Sources: Principal Investigator from reviewed literatures

3. METHODOLOGY

3.1. Study Area and Period

3.1.1. Study area

The study was conducted in Dire Dawa Administration. Dire Dawa was founded in 1902 after the Addis Ababa to Djibouti railway construction in the area to serve as a trading center for both and it is located at 501 km from Addis Ababa, 311km from Djibouti and 49km from Harar (CSA, 2007).

Dire Dawa is located between 9°27´and 9° 49´north latitude and between 41° 38´and 42° 19´ east longitudes. It is bounded by Oromiya regional state in the south and by Somali regional state in the north, east and west. Its topography has a sloppy gradient from the southern to the northern part with an altitude range from 950m to 2,260m above sea level and its mean annual temperature is 31.4° and its mean annual rainfall range about 1,000mm in south and 600mm in north low land (CSA, 2007).

According to census of 2007 G.C (1999E.c) its total population projected around 360,000, among them which male and female contribute each 50% with equal proportion (CSA,2007).

Dire Dawa administration has 38 rural kebeles and 9 urban kebeles. In both urban and rural totally there were 103 primary schools (50 had grade 5-8) and 19 secondary schools (DDAEB, 2014).

3.1.2. Study period

The study was carried out from April 16 to 26, 2015.

3.2. Study Design

School based cross-sectional study was conducted by using quantitative data collection methods.

3.3. Source and Study Population

3.3.1. Source population

All second cycle primary schools students in Dire Dawa Administration

3.3.2. Study population

All second cycle primary schools students in randomly selected primary schools, enrolled in 2014/15 academic year in Dire Dawa Administration.

3.4. Inclusion and Exclusion criteria

3.4.1. Inclusion criteria

School children grade 5-8 in the randomly selected primary schools.

3.4.2. Exclusion criteria

Student not in grade 5-8 in the randomly selected primary schools

3.5. Sampling Technique and Sample Size

3.5.1. Sampling size

To assess factors influencing water, sanitation and hygiene (WASH) practice among second cycle primary school students the sample size was calculated by using single population study formula. The assumption made for the sample size calculation was 95% confidence interval, an expected proportion of WASH practice 52% and 0.05 margin of error.

The formula: $n = \frac{(z\alpha/_2)^2 \ pq}{d^2}$

Where: n - minimum sample size.

P - 0.52 (52%) has been used from proportion of practice of primary school students on WASH, cross- sectional study conducted in Angolela, Ethiopia (Vivas et al.,2010)

d - Margin of error (an absolute precision) = 5%

$(z\alpha/_2)^2$ - Confidence interval (95%= 1.96)

Design effect (= 2) - is considered for multi-stage sampling among schools, grades and classes/sections (Figure3)

n = $\frac{(1.96)^2(0.52)(0.48)}{(0.05)^2}$ =384

Design effect (=2) n = 384(2) = 768

Contingency (= 10%) n = 768 + 77 =845

To assess factors influencing WASH practice among second cycle primary school children the sample size (n) was 845.

To assess the status of WASH the sample size (n) was 12 second cycle primary schools

3.5.2. Sampling technique

The study applied quantitative methods; a simple random sampling technique was used to select sample schools from the list which were provided by the Regional Education Bureau. The schools were selected on the basis of their location and type. Out of the total 103 primary school in Dire Dawa Administration only 50 primary schools have second cycle (grade 5 to 8) from these 12 schools(one-fourth /a quarter) were randomly selected by using simple random sampling(using lottery method). There are about 17 private second cycle primary schools located only in urban areas, and 33 public second cycle primary schools (20 located in rural areas and 13 located in urban areas). We selected four private second cycle primary schools, and eight public second cycle primary schools (three from urban areas and five from rural areas).

A proportion between rural and urban primary schools was respected while selecting primary schools: the number of primary schools existing in each areas (rural=20/50×100%×12=5; and urban=30/50×100%×12=7) divided by the total numbers of primary schools with grade 5-8 in Dire Dawa administration (50 second cycle primary schools) and multiplied by 100% to obtain the percentage of each area and then these percentages was multiplied by the number of randomly selected primary schools (12) to determine the primary schools from which the students were sampled. A proportion between public and private primary schools was respected while selecting second cycle primary schools: public= (33/50×100%×12) = 8 and private = (17/50×100%×12) =4 second cycle primary schools were proportionally allocated.

A proportion among 12 randomly selected primary schools was respected while selecting the second cycle students' sample. The second cycle students sample was allocated proportionally among 12 randomly selected primary schools as follows: For each randomly selected primary school the number of second cycle students was divided by the total number of second cycle students of 12 randomly selected primary schools and multiplied by 100% to obtain the percentage, and then these percentage was multiplied by the total sample size (n=845) to determine the sample size of the second cycle students for each 12 randomly selected primary schools.

For each randomly selected primary schools the sample size of second cycle students in each grades and class was allocated proportionally as follows: the number of second cycle students in each grade was divided by the total number of second cycle students in each

randomly selected primary school and multiplied by 100% to obtain the percentage, and then these percentage was multiplied by the sample size of each primary school to determine the sample size of second cycle students in each grades (sample size for each class also allocated proportionally).Finally, the sample size allocated for each class was drawn randomly using the student list of that class as a sampling frame.

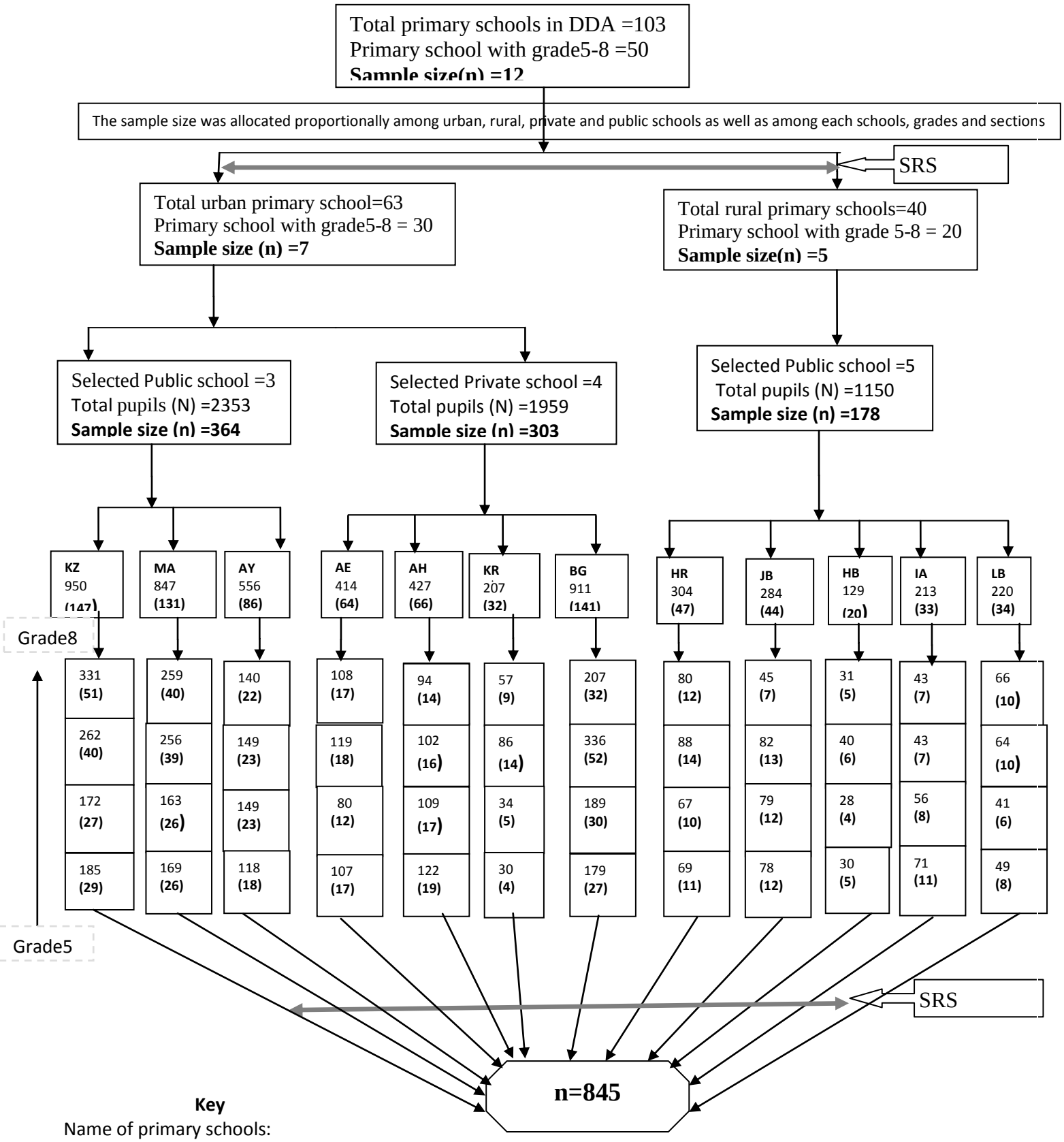
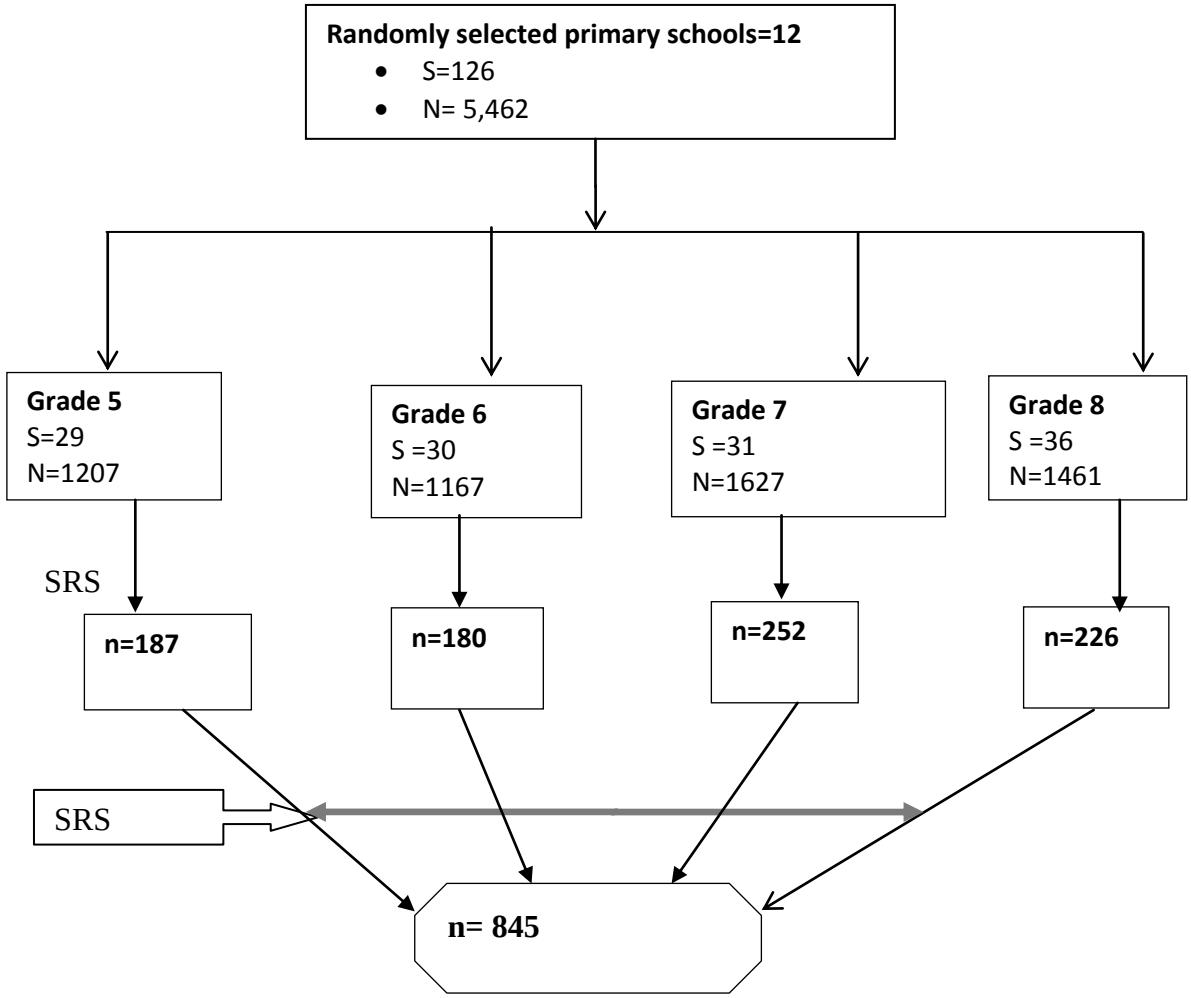


Figure 2 Schematic diagram of sampling procedure and sampling frame among second cycle primary school students in Dire DawaAdministration, Eastern Ethiopia, April 2015
Source: Dire Dawa Administration Education Bureau



Key

N= Number of students
S = Number of section
n= randomly selected students (sample)
SRS= Simple Random Sampling

Figure 4 Schematic diagram of multi-stage sampling among schools, grades, and sections of second cycle primary school students in Dire Dawa Administration, Eastern Ethiopia, April 2015

Source: Dire Dawa Administration Education Bureau annual report

3.6. Data Collection

The observational check list and questionnaire were used to collect quantitative data. As part of the quantitative study, the selected 12 schools were observed using checklists for generating data on WASH status. The specific data were taken from each school pertaining to the water supply, the sanitation facilities, waste disposal facilities, hand washing facilities, etc

A structured pretested questionnaire specifically developed for this purpose was used for data collection. The questionnaire designed by identifying the main variable to be measured The original questionnaire was prepared in English. Then the questionnaire was translated into Amharic, Oromiffa and Somali, and to check close consistency translated back to English.The questionnaire was both open ended and closed ended questionnaire that helps to obtain demographic information and respondents KAP towards WASH. The questionnaire was administered by face to face interviewing of the randomly selected pupils.

Twelve enumerators (HEWs) and two supervisors (Environmental professionals) were trained for two days by investigator. Data collectors were supervised daily by supervisors and researcher was supervising over all

3.7. Study Variable

3.7.1. Dependent variable

- Students Water, Sanitation and hygiene (WASH) practice

3.7.1. Independent variable

- Age, Gender, School type, Schools location, Knowledge and Attitude of students

3.8. Operational Definition

1. **Knowledge –**students ‘understanding towards WASH.

For knowledge questions each correct response was marked as one, while incorrect or ‘don’t know’ responses were marked as zero. The scores were then added and the mean score calculated. Summative scores were not calculated if answers to any question were missing. Respondents that scored below the mean value were categorized as having poor knowledge while those that scored above the mean value were categorized as having good knowledge (Zahra et al., 2013; Asekun-Olarinmoye, 2014; ACF-USA, 2012).

2. Attitude -opinion/perception/awareness/feeling of respondents/group of study towards WASH.

For attitude questions each correct response was valued as one, while incorrect or 'uncertain' responses were marked as zero. All scores were added and the mean score calculated. Summative scores were not calculated if answers to any question were missing. Scores below the mean value were categorized as having poor attitude while respondents that scored above the mean value were categorized as having good attitude (Zahra et al., 2013; Asekun-Olarinmoye, 2014; ACF-USA, 2012).

3. Practice – skill/adaptation of the study group to perform the required WASH activities/ways in which respondents demonstrate their knowledge and attitudes through their actions.

For practice questions each correct response was valued as one, while incorrect' responses were marked as zero. All the scores were added and the mean score calculated. Summative scores were not calculated if answers to any question were missing. Respondents that had scores below the mean value were categorized as having poor practice while those that scored above the mean value were categorized as having good practice (Zahra et al.,2013; Asekun-Olarinmoye,2014;ACF-USA, 2012)

4. WASH-is a strategic approach that provides schools with safe drinking water, improved sanitation facilities and hygiene education that encourages the development of healthy behavior for life among school children (WHO/UNICEF JMP, 2004).

5.Good WASH Status in school-Availability of adequate safe drinking water five liters/capita/day, availability of drinking water point at a distance of ≤ ten walking minutes, availability of adequate toilet one toilet for 25 girls and one toilet plus one urinals for 50 boys, availability of toilet at distance of ≤ 30m from class room, availability of adequate hand washing facilities 1:100, availability of hand washing facilities (HWFs) at distance of ≤ ten meter from toilet, Availability of waste disposal facilities/system, and school offered hygiene education (the minimum recommended standard in low-cost settings) (Adam John et al., 2009; MOE et al., 2010)

3.9. Data Quality Control

To ensure completeness and internal consistency of the Questionnaire pre-test were conducted in primary school that was not included in the sample and 5% pretesting of Questionnaire were tested.

The data was cleared by identifying those having incomplete responses and no responses, and categorizing, editing, coding, classifying and tabulation of collected data. Examining the collected raw data to detect error and omission and correcting them by editing. Data quality was checked in the field to ensure that all information were collected and recorded, and also checked centrally in the office after completing and returning from field.

A coding system for data entry was developed by two Environmental professionals who were trained in answer coding. The data entry was conducted by using EPI INFO software using two computers to check the consistency of the result against each other's. A coding system for data entry, the data entry and analysis was supervised by investigator to ensure the consistency and completeness of the data and its quality.

3.10. Methods of Data Analysis

Data entry and cleaning were done using EPI INFO (version 3.3.2) and statistical analysis was done by using SPSS (version 17).Frequency tables used for general characteristics description such as socio-demographic, status of school WASH and KAP of students. Bivariate method was used to classify frequency distribution of students' knowledge and attitude according to the WASH practice. Binary logistic regression was used to evaluate the relation and all of the variables showed significant association was included into the final Multinomial Logistic Regression (MLR) model. Odd ratio (OR) and 95% confidence interval (CI) calculated by logistic regression in order to evaluate the relationship between the WASH practice and associated factors. All reported p-values are two-tailed and statistical significance was set at 0.05.

3.11. Ethical Consideration

Initially letters of ethical approval were obtained from Haramaya University college of Health and Medical Science institutional health research ethics review committee (IHRERC). Permission obtained from Dire Dawa Administration Bureau of Health and Education. The purpose, procedure, duration, risk and benefits of the study was explained for primary schools principals and parents to obtain their consents and then a letter of informed consent were drafted and signed by both principal and parents. The confidentiality of the interview result was maintained. The cultural values, beliefs, religion and norms of the respondents were respected.

3.12. Information Dissemination

The findings from this study was summarized in report together with conclusion and recommendation and then disseminated within Dire Dawa Administration to regional Health bureau, Education bureau and primary schools. Since there is no baseline data on the level of WASH practice and its predictors, the findings of this study serve as a base line to improve WASH practice of students in all primary schools of Dire Dawa Administration.

4. RESULT

4.1. Socio-Demographic Characteristics

Out of 845 study participants initially sampled 815 have participated in the study making a response rate of 815(96.4%).Based on school location in rural areas the percentage of male student was 75(43.9%) and the percentage of female student was 96(56.1%) where as in urban areas the percentage of male students was 354(55%) and the percentage of female student was 290(45%).With respect to the school type; male student was 292(55.9%) and female student was 230(44.1%) among public schools while male student was 137(46.8%) and female student was 156(53.2%) among private schools. The majority of the students were aged less than 14 years 470(57.7%).The mean age of the study subject was 13.2 (Table 1).

Table 1 Socio-demographic characteristics of the study participants in primary schools among second cycle students in Dire Dawa Administration Eastern Ethiopia, April, 2015(n=815).

Socio-demographic variables	**Level**	**Frequency**	**Percent**
Students' sex	Male	429	52.6
	Female	386	47.4
Number of student by school location	Urban	644	79.0
	Rural	171	21.0
Number of student by school type	Private	293	36.0
	Public	522	64.0
Educational status of students	Grade five	181	22.2
	Grade six	170	20.8
	Grade seven	250	30.7
	Grade eight	214	26.3
Students' age group	<14 years	470	57.7
	≥14 years	345	42.3

4.2. Primary Schools WASH Status

Out of twelve primary schools, three (25%) primary schools were good in their WASH status which all of them are private schools and nine (75%) primary schools were poor in their WASH status of these 8(88.9%) were public schools and one(11.1%) was private school. Out of the total study subjects, 262(32.1%) were in the schools with good WASH status and 553(67.9%) were in the school with poor WASH status (Table 2).

All twelve (100%) primary schools had fences, good physical condition of building, and water points at a distance of ≤ ten walking minutes round trip from the class rooms. The ratio of water point to student is 1:590. However, the minimum recommended by national standard is 1:100.Ten (83.3%) of the primary schools had adequate safe drinking water (five liters/capita/day) and functional drinking water points. Out of twelve primary schools, five (41.7%) primary schools had hand washing facilities at a distance of ≤ ten meter from toilet out of these four (80%) primary school had functional hand washing facilities without soap and the ratio of single hand washing facility to school children is 1:232. However, the minimum recommend by national standard is one washing facility for every 100 students (Table 2).

Simple pit latrines were the dominant type of human waste management in eleven (91.7%) primary schools, out of these ten (83.3%) primary schools had toilet located at a distance ≤ 30m from the class room and only one (8.3%) primary school had flush toilet at a distance of ≤ 30m from the class room. Generally, two (16.7%) primary schools had clean toilet and ten (83.3%) of the primary schools had gender separated toilet. The ratio of single latrine seat to school children is 1:107.However, the national standards recommend one female toilet for every 25 or 30 girls and one male toilet plus a urinal for every 50 boys. Out of twelve primary schools only four (33.3%) primary schools were dispose solid waste properly, and their inside and outside area was free from wastes. Out of twelve primary schools, only two (16.7%) primary schools reported that offered hygiene education for students (Table 2).

Table 2 Status of WASH amongprimary schools in Dire Dawa Administration Eastern Ethiopia, April, 2015(n=12)

Status of WASH in primary schools	**Level**	**Frequency**	**Percent**
Availability Adequate safe drinking water (5L/c/d)	yes	10	83.3
	No	2	16.7
Functional drinking water points at a distance of ≤10 minutes round trip from classroom	Yes	10	83.3
	No	2	16.7
Sources of drinking water properly covered	Yes	10	83.3
	No	2	16.7
Child safe water source (no slippery cover, stagnant water, wastes, flood etc. around well)	Yes	9	75.0
	No	3	25.0
Child friendly water drinking point (appropriate dimension of tap)	Yes	9	83.3
	No	3	25.0
Gender separated toilet	Yes	10	83.3
	No	2	16.7
Functional toilet by type	Flush toilet	1	8.3
	Simple latrine	11	91.7
Toilet distance from class room	≥30m	1	8.3
	≤30m	11	91.7
Insects present in latrine	Yes	11	91.7
	No	1	8.3
Suitable toilet bowl size	Yes	9	75.0
	No	3	25.0
Toilets without too much smell	Yes	2	16.7
	No	10	83.3
Toilets with door	Yes	4	33.3
	No	8	66.7
Clean toilet	Yes	2	16.7
	No	10	83.3
Availability hand washing facilities	Yes	5	41.7
	No	7	58.3
Hand washing facilities at distance of ≤ 10m from toilet(n=5)	Yes	3	60.0
	No	2	40.0
Gender separated hand washing facilities(n=5)	Yes	1	20.0
	No	4	80.0
Functional hand washing facilities(n=5)	Yes	4	80.0
	No	1	20.0
Adequate water available in all hand washing facilities(n=5)	Yes	1	20.0
	No	4	80.0
Properly dispose solid wastes	Yes	4	33.3
	No	8	66.7
Clean school yard/play grounds	Yes	4	33.3
	No	8	66.7
School offer hygiene education	Yes	2	16.7
	No	10	83.3
WASH status category	Good	3	25.0
	Poor	9	75.0

4.3. Knowledge, Attitude and Practice of Student towards WASH

4.3.1. Knowledge of student towards WASH

Out of 815 study subjects 695(85.3%) were categorized as having good knowledge and 120(14.7%) were categorized as having poor knowledge towards WASH (Table 3).

Seven hundred twenty one (88.5%) of the student reported that practicing hygiene activities reduces the incidence of WASH-related diseases. Five hundred fourteen (63.1%) of the students reported that using safe water is important for preventing some WASH-related diseases, 458(56.2%) reported that drinking water should be never touched by dirty hand, and 439 (53.9%) of the students reported that treating water is important to make safe for drinking. Three hundred fifty two (43.2%) of the students reported that using latrine is important for preventing some WASH-related diseases and 362 (44.4%) of the students reported that proper toilet usage is better than getting medication for diarrhea (Table 3).

Six hundred eighty one (83.6%) of the student reported that hand washing is important for preventing some WASH-related diseases, 606(74.4%) reported that hand washing with soap is better than water only in diseases prevention, 756(92.8%) of the students reported that hand washing is important before eating, 782(95.9%) reported hand washing is important after eating and 711(87.2%) of the students reported that hand washing is important after using toilet (Table3).

Table 3 Knowledge towards WASH among second cycle primary schools students in Dire Dawa administration Eastern Ethiopia, April, 2015(n= 815)

Characteristics/variables	**Level**	**Frequency**	**Percent**
Practicing hygiene activities reduces incidence of WASH-related diseases	Yes	721	88.5
	No	94	11.5
Using safe water is important for preventing some WASH-related diseases	Yes	514	63.1
	No	301	36.9
Treating water in any way to make it safer to drink is important	Yes	439	53.9
	No	376	46.1
Drinking water should never be touched by dirty hand	Yes	458	56.2
	No	357	43.8
Using toilet is important for preventing some WASH-related diseases	Yes	352	43.2
	No	463	56.8
Proper latrine usage is better than getting medication for diarrhea	Yes	362	44.4
	No	453	55.6
Hand washing is important for preventing some WASH-related diseases	Yes	681	83.6
	No	134	16.4
Hand washing is important before eating	Yes	756	92.8
	No	59	7.2
Hand washing is important after using toilet	Yes	711	87.2
	No	104	12.8
Hand washing with soap is better than water only in disease prevention	Yes	606	74.4
	No	209	25.6
Knowledge categories	Good	695	85.3
	Poor	120	14.7

4.3.2. Students' attitude towards WASH

Out of the total study participants 679 (83.3%) of the students were classified as having good attitude and 136(16.7%) of the students were classified as having poor attitude towards WASH (Table 4).

Five hundred twelve (62.8%) of the students reported that water container needs cleaning and covering, and 744(91.3%) of the students reported that boiling water kill germs. Six hundred thirty five (77.9%) of the student reported that human feces contain germs, 483(59.3%) of the student reported that open defecation cause germs to spread and 372(45.6%) reported that germs can be transmitted from toilet by direct contact or indirectly by contaminated hands or via insects. Six hundred forty one (78.7%) of the student reported that if not wash their hands after defecation they could get germs and 628(77.1%) of the student reported that if people do not wash their hands more often they will get sick (Table 4).

Six hundred thirteen (75.2%) of the student reported that playing near waste disposal place is dangerous for health, 739(90.7%) reported that eating not well cooked/washed food can affect health, 619(75.9%) reported eating food sold on the street can leads to diseases, 746 (91.5%) reported that fruits and vegetables that look clean needs to be washed before eating, and 677(83.1%) of the student reported that drinking with shared cup can be transmitting diseases (Table 4).

Table 4 Attitude towards WASH among second cycle primary schools students in Dire Dawa administration Eastern Ethiopia, April, 2015(n= 815)

Characteristics	**Level**	**Frequency**	**%**
Water container needs cleaning and covering	Yes	512	62.8
	No	303	37.2
Boiling water kill germs	Yes	744	91.3
	No	71	8.7
Human feces contain germs	Yes	635	77.9
	No	180	22.1
Open defecation may cause germs to spread	Yes	483	59.3
	No	332	40.7
Germs can be transmitted from toilets by direct contact with or indirectly contaminated hands, or via insects	Yes	372	45.6
	No	443	54.4
If you do not wash your hand after defecation you could get germs	Yes	641	78.7
	No	174	21.3
If people do not wash their hands more often they will get sick	Yes	628	77.1
	No	187	22.9
Playing near waste disposal place is dangerous for health	Yes	613	75.2
	No	202	24.8
Eating not well cooked/washed food affect health	Yes	739	90.7
	No	76	9.3
Eating food sold on street can leads to diseases	Yes	619	76.0
	No	196	24.0
Fruits and vegetables that look clean needs to be washed before eating	Yes	746	91.5
	No	69	8.5
Drinking with shared cup can be transmitting diseases	Yes	677	83.1
	No	138	16.9
Attitude categories	Good	679	83.3
	Poor	136	16.7

4.3.3. Students' practice towards WASH

Out of 815 students 509(62.5%) of the students were classified as having good practice and 306(37.5%) of the students were classified as having poor practice towards WASH (Table 5).

Among the school children 288(35.3%) reported that usually use toilet, 334(40.9%) reported they have ever cleaning and covering water container, 315(38.7%) reported that never touched drinking water by dirty hand, 291(35.7%) reported that boil their drinking water and 248(30.4%) reported that add bleach to their drinking water but only 443(54.4%) reported that usually use safe water (Table 5).

Two hundred seventy eight (34.1%) of the students reported that always wash their hands before eating, 294(36.1%) reported wash their hands after eating and 262 (32.1%) of the students reported that always wash their hands after using toilet. Three hundred seventeen (38.9%) of the student reported they never play near waste disposal places, 416(50%) reported they never eat food sold on the street, 414(50.8%) reported they never eat fruits that looks clean without washing and 340(41.7%) of the student reported they never drink water with shared cup/bottle (Table 5).

Two hundred forty eight (30.4%) of the student reported that always clean their teeth, 611(74.9%) reported that take bath at least once a week, 594(72.9%) reported that wash their clothes, and 566(69.4%) of the student reported that cleaning their hair at least once a week. Among the study subjects only 293(35.9%) reported that trained on hygiene and sanitation (Table 5).

Table 5 Practices towards WASH among second cycle primary schools students in Dire Dawa administration Eastern Ethiopia, April, 2015(n= 815)

Characteristics	**Level**	**Frequency**	**Percent**
Usually use toilet	Yes	288	35.3
	No	527	64.7
Usually use safe water	Yes	443	54.4
	No	372	45.6
Clean and cover water container	Yes	334	41.0
	No	481	59.0
Never touched drinking water by dirty hand	Yes	315	38.7
	No	500	61.3
Boil drinking water	Yes	291	35.7
	No	524	64.3
Add bleach to drinking water	Yes	248	30.4
	No	567	69.6
Always wash hands before eating	Yes	278	34.1
	No	537	65.9
Always wash hands after using toilet	Yes	262	32.1
	No	553	67.9
Never play near waste disposal places	Yes	317	38.9
	No	498	61.1
Never eat un cooked/un washed food	Yes	323	39.6
	No	492	60.4
Never eat food sold on street	Yes	416	51.0
	No	399	49.0
Never drink with shared cup/bottle	Yes	340	41.7
	No	475	58.3
Always clean teeth	Yes	248	30.4
	No	567	69.6
Take bath at least once a week	Yes	611	75.0
	No	204	25.0
Cleaning hair at least once a week	Yes	566	69.4
	No	249	30.6
Practice categories	Good	509	62.5
	Poor	306	37.5

4.4. Factors Associated With WASH practices of students

Primarily variables that had p-value <0.03 at bivariate analysis were used to develop logistic model in order to identify factors which more strongly linked with the WASH practice outcome. On logistic regression types of school, knowledge and attitude of students were found to be significantly associated to WASH practice.

The binary logistic regression of all independent variables showed that, the type of the school students' learn in(COR=1.982,95%CI=(1.370-2.687)),knowledge on the importance of using latrine(COR= 2.019, 95%CI=(1.514-3.911)),attitude on open defecation causes germs to spread(COR=1.727,95%CI=(1.542-2.971)),attitude on human feces contains germs(COR=1.726,95%CI=(1.234-2.413)) and attitude on drinking with shared cup can be transmitting diseases (COR=1.500,95%CI=(1.036-2.172)) were found to be significantly associated with Water, Sanitation and Hygiene(WASH) practice (Table 6).

In multinomial logistic regression types of school, knowledge on the importance of using toilet, as well as attitude on open defecation cause germs to spread, drinking with shared cup can be transmitting diseases and human feces contains germs were found to be significantly associated to WASH practice. Students who learn in private schools are 2.845 times more likely to have good WASH practice compare to those who learn in public schools (AOR=2.845, 95%CI=(1.408-3.775)). Students who are knowledgeable on the importance of using toilet are 3.277 times more likely to have good WASH practice compare to those who are not knowledgeable (AOR=3.277,95%CI=(1.540-4.976)). Students who felt that human feces contain germs are 1.561 times more likely to have good WASH practice (AOR=1.561, 95%CI= (1.095-2.225)). students who believed that open defecation cause germs to spread are 1.926 times more likely to have good WASH practice (AOR=1.926,95%CI=(1.971-2.765)),Students who believed that drinking with shared cup transmit diseases are 1.58 times more likely to have good WASH practice (AOR=1.580,95%CI=(1.082-2.307)) (Table 6)

Table 6 Factors associated with hygiene practice among second cycle primary school students in Dire Dawa Administration Eastern Ethiopia, April 2015 (n=815)

Variables	`WASH practice		COR(95%CI)	AOR(95%CI)
	Good	Poor		
Type of school				
Private	212(72.4%)	81(27.6%)	1.982(1.370-2.687)	2.845(1.408-4.775) **
Public	297(56.9%)	225(43.1%)	1	1
Hand washing before eating				
Yes	479(63.4%)	277(36.6%)	1.672(0.983-2.844)	2.234(0.998-3.340)
No	30(50.8%)	29(49.2%)	1	
Hand washing after defecation				
Yes	443(62.3%)	268(37.7%)	0.952(0.621-1.459)	2.034(0.987-3.890)
No	66(63.5%)	38(36.5%)		
Water container needs cleaning and covering				
Yes	323(63.1%)	189(36.9%)	1.075(0.802-1.441)	2.491(0.954-4.447)
No	186(61.4%)	117(38.6%)		
Importance of using toilet				
Yes	202(57.4%)	150(42.6%)	2.019(1.514-3.911)	3.277(1.540-4.976) *
No	307(66.3%)	156(33.7%)	1	1
Boiling water kill germs				
Yes	475(63.8%)	269(36.2%)	1.922(1.178-3.134)	3.524(0.814-4.254)
No	34((47.9%)	37(52.1%)	1	1
Open defecation cause germs to spread				
Yes	327(59.4%)	156(40.6%)	1.727(1.542-2.971)	1.926(1.971-2.765) *
No	182(66.9%)	150(33.1%)	1	1
Human feces contain germs				
Yes	415(65.4%)	220(34.6%)	1.726(1.234-2.413)	1.561(1.095-2.225) *
No	94(52.2%)	86(47.8%)	1	1
Drinking with shared cup transmit diseases				
Yes	434(64.1%)	243(35.9%)	1.500(1.036-2.172)	1.580(1.082-2.307) *
No	75(54.3%)	63(45.7%)		
Fruits and vegetables that look clean needs to be washed before eating				
Yes	474(63.5%)	272(36.5%)	1.693(1.032-2.777)	1.482(0.869-2.526)
No	35(50.7%)	34(49.3%)	1	1

* Significant at P = <0.03, ** Significant at P = < 0.001, COR = Crude odd ratio, AOR=Adjusted odd ratio, CI= Confidence interval

5. DISCUSSION

The status of WASH of three (25%) primary schools were good which all of them were private schools and the status of WASH of nine (75%) primary schools were poor of these eight (88.9%) were public schools while one (11.1%) was private school. A similar cross-sectional study from Haiti (Daniela et al., 2013), and from Dessie, Ethiopia (Hassen Seid and Abera Kumie, 2013) showed that more than 75% of the primary schools had poor WASH status.

All observed primary schools had accessible water point at distance of ≤ ten walking minutes, the ratio of water point to student is 1:590 whereas the national standard recommended 1:100, and ten(83.3%) of the school had safe drinking water and functional drinking water point. This may seem to be better than the study reported from Malawi ((George, 2009) and the study reported from Nigeria the ratio of water point to student was more than 1:600 (David O.Olukanni, 2013). This might be due to the fact that our study was done in one region compared to the above mentioned nationwide studies.

The overall latrine to school population ratio was (1:107) showing that the current latrine coverage in the sampled primary schools was lower than what is recommended in our national standard (one latrine for 25 or 30 girls and one latrine plus one urinal for 50 boys). The low ratio is generally consistent with that of the Malawi national study indicated that 1:100 (George, 2009). However, this ratio seems to be better than the study reported from Nigeria which implied 1:200 (David O.Olukanni, 2013). This might be due to the fact that our study was done in one region compared to the above mentioned nationwide studies.

The number of primary schools with hand washing facilities (HWFs) without soap identified in this study was 5(41.7%), out of these 4(80%) of the primary schools had functional hand HWFs but none of them had soap. This study may seem to be better than the study reported from Malawi which was 18.9% of primary school HWFs without soap (Georg, 2009), and a national study reported from Ethiopia showed that only 5% of primary school had HWFs without soap (UNICEF, 2014), and an other study from Ethiopia reported that all primary schools (100%) had no HWFs (Hassen seid &Abera Kumie, 2013).

In this study of school children grades 5-8, we assessed factors associated to WASH practices. Of the students surveyed, 695(85.3%), 679(83.3%) and 509(62.5%) were classified as having good KAP of WASH, respectively. A similar study from Angolela, Ethiopia showed that the students classified as having good KAP of WASH were 65%, 54% and 52%, respectively (Vivas et al., 2010).In addition a study from South Africa showed that 60.6±1.34%, 51.8±1.05% and 34.9±2.01%) of the students were classified as having good KAP of WASH, respectively (Jerry and Jabulani, 2013).The low WASH practice might be due to the fact that the students' knowledge and attitude might be negatively influenced by WASH-enabling facilities. The hygiene behaviors that children learn at school made possible through a combination of hygiene education and suitable WASH-enabling facilities (Adams John et al., 2009).

The study revealed that 756(92.8%) of the students reported the importance hand washing before eating. However, only 278(34.1%) of students reported that they wash their hands before eating. It is substantially higher than knowledge of hand washing before eating (33.6%) reported from Colombia(Lopez-Quintero et al., 2009), and 78% reported from India (snel et al., 2014). However, only 14% and 23% of the students reported that they wash their hands before eating, respectively. The considerably higher knowledge on the importance of hand washing before meals among study subject may be due to the Ethiopian cultural tradition and ceremonial practice of washing hands before eating or the desire for clean, fresh hands before eating (Vivas et al., 2010).

Among the school children 711(87.2%) reported that the importance hand washing after using toile. However, only 262 (32.1%) of students reported that they wash their hands after using toilet. A similar study from Angolela, Ethiopia showed that 76.6% of students reported that the importance of hand washing after using toilet.However,only 15% of students reported that actually following this practice (Vivas et al., 2010).In addition, study from Belize showed that 98% of students reported that the importance of hand washing after using toilet. However, only 18.6% of students reported that actually following this practice (David, 2009). The low hand washing practice might be due to lack of appropriate resources or HWFs (Scott et al., 2007, Oswald et al., 2008, and (Lopez-Quintero et al., 2009

This study indicated that 514(63.1%) of the students reported that using clean water, and 352(43.2%) of the students reported that using toilet is important for preventing some

WASH-related diseases.However,only 443(54.4%) and 288(35.3%) of students reported that usually use safe water and latrine, respectively.Consistently,a study from Ethiopia showed that 61% of the students reported that the importance of using safe water, and 44% of the students reported the importance of using toilet. However, only 51.4% and 30% of students reported that usually use safe water and latrine, respectively (Vivas et al., 2010).In addition, a study from Bangladesh showed that 65% of student reported that the importance of using clean water, and 50.4% of student reported that the importance of using latrine. However, 48% and 33% of students reported that usually use safe water and latrine, respectively (Hoque, 2013).The low practice might be due to lack of clean, functional, adequate, and accessible water supply and toilet facilities (MOE et al., 2010).

Awareness of health aspects of hygiene behavior is important because it determines the degree of sustainability of an intervention in WASH. Perception strongly influences one's beliefs and practices (Abera kumis and Abedulahi Ali, 2005.In this study 512(62.8%) of the student reported that water container needs cleaning and covering, 635(77.9%) of the student reported that human feces contain germs, and 744(91.3%) of the students reported boiling water kill germs. A similar study from Ethiopia showed that 89% of the student reported human feces contain germs,75.2% reported that water container needs cleaning and covering, and 85% of the student reported that boiling water kill germs(Mulubirhan Assefa and Abera Kumie, 2014).Furthermore, a study from Sudan showed that 74% of the student reported that human feces contain germs, 70% of the students reported that water container needs cleaning and covering, and 81.9% of the students reported that boiling water kill germs (Alian et al.,2010).

This study showed that 746(91.5%) of the students reported that fruits and vegetables that look clean need to be washed before eating but only 414(50.8%) of the students reported actually following this practice. A similar study from Bangladesh indicated that 77.3% of the students reported that fruits and vegetables that look clean need to be washed before eating but only 36% of the students reported actually following this practice (Hoque, 2013).A study from India implied that 75% of the students reported that fruits and vegetables that look clean need to be washed before eating but only 10% of the students reported actually following this practice (Snel et al., 2014)

Our study showed that 594(72.9%),248(30.4%),566(69.4%) and 611(75%) of the students reported washing clothes at least once week, brushing their teeth always, cleaning hair at

least once a week and bathing at least once a week, respectively. A similar study reported by(Vivas et al.,2010) from Angolela, Ethiopia showed that 67%, 91%, 88%, and 79% of the students bathing for at least 14 days, brushing their teeth always, washing their clothes weekly, and washing their hair for at least 14 days, respectively. In addition, a similar study from Djibouti showed that the percentage of students that wash their clothes weekly, brushing their teeth always, clean their hair weekly and taking bath every other days were (45%, 83.2%, 43% and 100% respectively) (Bachir, 2009) .

Limitation

1. Since this study was cross-sectional, it cannot show cause and effect relationship between different factors with outcome variables.
2. The available research on factors influencing WASH practice among primary school children is limited in the Ethiopian setting so that we are unable to compare the findings of this study with many other Ethiopian studies.
3. During interview there may be a recall bias by participants
4. This study was limited to students in the second cycle (grade5-8) and those who were present in school during survey time. Children absent due to illness or other circumstances were not included.
5. This study was not including the study subject parents/ households to assess the effect of family factors on WASH practices of school children

6. CONCLUSION ANDRECOMMENDATION

6.1. Conclusion

This study showed that factors associated with WASH practice among second cycle primary schools students in Dire Dawa Administration. Types of school, knowledge on using latrine, attitude on open defecation cause germs to spread, attitude on human feces contain germ and attitude on drinking with shared cup can be transmitting diseases were significantly associated with WASH practice.

.The findings of this study indicated that 509 (62.5%) of the study subjects had good WASH practice and 306(37.5%) of the study subjects had poor WASH practice. This study also showed that three (25%) primary schools were good in their WASH status and nine (75%) primary schools were poor in their WASH status among sampled primary schools in Dire Dawa Administration. From this finding we can conclude unless early corrective action is taken, the problem might continue to exist and becomes the main challenge.

6.2. Recommendations

Based on the finding of this study the following recommendations are forwarded:

- Dire Dawa Administration Health Bureau, Education Bureau and NGO's working in the area should form/encourage/support health clubs in school to teach/ demonstrate proper WASH practice by providing well-designed and well-located WASH facilities (Resources).
- Health institutions and mass media should create awareness on WASH and its predictors to school children and their families.
- All primary schools should advocate and engage the students on WASH activities at the school and outside school.
- Finally, since this study cannot show cause and effect relationship we strongly recommend other researchers to conduct further studies among all primary school children including their parents/households by using case control study that better investigate factors influencing WASH practice.

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8. ANNEXES

Annexes1: Information sheet and Informed consent

Annex1.1: Information sheet and Informed consent for parents/guardians

Haramaya University College of health and medical science

Information Sheet and Informed Consent Form For second cycle Primary School children parents/guardians

My name is _____. I am working as a data collector for the study being conducted in this school by Ato Mebratu Tadesse who is studying for his master's degree at Haramaya University, the college of Health and Medical sciences. I am kindly requesting you to lend me your attention to explain you about the study and being your child selected as the study participant.

The study project title:

Factors influencing Water, Sanitation and Hygiene (WASH) practice among second cycle primary school students in Dire Dawa Administration, Eastern Ethiopia.

Purpose /aim of the study:

The findings of this study can be of a paramount importance for the regional Bureau of Health and Education, and for primary school managers to plan intervention programs to prevent school children WASH related health problems in your school and others; there by improve school children health problems in general. moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of a master`s program in water supply and sanitation management for the principal investigator.

Procedure and duration:

I will be interviewing your child using a questionnaire to provide me with pertinent data that is helpful for the study. There are 36 questions to answer where I will fill the questionnaire by interviewing your school child. The interview will take about 70 minutes, so I kindly request you to allow me to interview your child.

Risks and benefits:

The risk of being participant in this study is very minimal, but only taking few minutes from your child time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the regional Health planners and for the primary school managements (principals, Administrators and soon).

Confidentiality:

The information your child will provide us will be confidential. There will be no information that will identify your child in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

Rights:

Participation for this study is fully voluntary. You have the right to declare your child to participate or not in this study. If you decide to participate, your child have the right to with draw the study at any time and this will not label her/him for any loss of benefits which s/he otherwise are entitled. Your child does not have to answer any question that he/she does not want to answer.

Contact address:

If you have any questions or concerns about the research you can contact the concerned person with the following address given below.

Principal investigator:	Address of IHRERC:
Name Mebratu Tadesse	Haramaya University
Address Dire Dawa Region, Dire Dawa	College of Health Science
Tel: **0910040562**	**T**el: **025-6661899**
E-mail mebreyoseph@gmail.com	P.O.Box 235, Harar

Declaration of informed voluntary consent:

I have read/you were read to me the information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of allowing or not allowing my child to participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that my child has the right to withdraw from the study at any time or not to answer any question that s/he does not want. Therefore, I declare my voluntary consent to allow you to interview my child in this study with my initials (signature) as indicated below.

Signature of parent/guardian: _____ signature of data collector: _____

N.B: This is signed face to face in the presence of the data collector
Please provide a copy of this signed consent to the parent/guardian

Annex 1.1:የወላጅ/ያሳዳጊ የመረጃ እና የስምምነት መግለጫ ቅጽ

ሀረማያ ዩኒቨርሲቲ

ህክምናና ጤና ሳይንስ ኮሌጅ

ድህረምርቃ ት/ትክፍል

ሰላም ጤና ይሰጥልኝ፡፡ስሜ_____እባላለሁ፡፡ዛሬ እዚህ የተገኘውት አቶ መብራቱ ታደሰ በሀረማያ ዩኒቨርስቲ በማህበረሰብ ጤና ለ2ኛ ዲግሪ ማሟያ ለሚሰራው ጥናታዊ ፅሁፍ መረጃ ስብሳቢ ሆኜነው፡፡ በመሆኑም ስለጥናቱ አጠቃላይ ሁኔታና ልጅዎ የጥናቱ ተሳታፊ በሚሆንበት ሁኔታ ላይ ገለፃ እንዳደርግሎት በጥሞና እንዲያደምጡኝ በአክብሮት እጠይቃለሁ፡፡

የጥናቱ ርዕስ፡-በመጀመሪያ ደረጃ ሁለተኛ ሳይክል ት/ቤቶች በውሃሳኒቴሽንና ሃይጅን (ዎሽ) ላይ የተማረዎች ገቢርና ተጓዳኝ ነገሮችን መዳሰስ ድሬደዋ አስተዳደር ምስራቅ ኢትዮጵያ

የጥናቱ አስፈሊጊነት፡-

ይህ ጥናት በህብረተሰብ ጤና አጠባበቅ ለሁለተኛ ዲግሪ ማሟያ ተብሎ የተዘጋጀ ሲሆን በዚሁ አጋጣሚ ደግሞ በድሬዳዋ አስተዳደር በመጀመሪያ ደረጃ ሁለተኛ ሳይክል ት/ቤቶች የውሃ ሳኒቴሽን ና ሃይጅን ሁኔታና ተጓዳኝ ነገሮችን ለማወቅ ነው። ስለዚህ ልጅዎ የሚሰጠን/የሚትሰጠን መረጃ በአስተዳደሩ የት/ቤቶችን የውሀ ሳኒቴሽንና ሃይጅን ሁኔታ ለማሻሻል እየተደረገ ባለው ጥረት መሰረት በመሆን ያግዛል ተብሎ ይጠበቃል፡፡

የጥናቱ ሂደት እና የሚፍጀው ጊዜ፡-

ለጥናቱ ጠቃሚና አስፈላጊ መረጃ ለማግኘት 36 ጥያቄዎችን ለመሙላት ለልጅዎ ቃለ መጠይቅ አደርግለታለሁ፡፡ መረጃውን ለመሰብሰብ የሚፈጀው ጊዜ 70 ደቂቃ ይሆናል፡፡ስለዚህ ልጅዎ የጥናቱ ተካፋይ ይ/ትሆን ዘንድ በአክብሮት እጠይቃለሁ፡፡

የጥናቱ ጉዳት እና ጥቅም፡-

በጥናቱ ውስጥ በመሳተፍ እና ጥያቄዎችን በመመለስ ቀጥታ ልጅዎ የምያገኘዉ/ የሚታገኘው ምንም ነገር አይኖርም፡፡ ነገር ግን ልጅዎ ጥናቱ ውስጥ በመሳተፉ /ፍዋ እና በምሰጠን/ በምትሰጠን ትክክለኛ መረጃ በአስተዳደሩ የት/ቤቶችን የውሀ ሳኒቴሽንና ሃይጅን ሁኔታ ለማሻሻል እየተደረገ ባለው ጥረት ይረዳል፡፡ ልጅዎ በጥናቱ ውስጥ በመሳተፉ/ ፍዋ የሚደርስበት/ባት ምንም አይነት የታወቀ ጉዳት አይኖርም፡፡

ሚስጥር ስለመጠበቅ፡-

ልጅዎ የሚሰጠን/የሚትሰጠን መረጃ ሁለ ሚስጢርነቱ የተጠበቀ ነው፡፡ ለዚህም ልጅዎን የሚገልጽ ምንም ነገር የለም፣ የጥናቱ ውጤት ለግለሰብ ወይም ደግሞ ለተወሰነ ት/ቤት ሳይሆን ለአጠቃላይ አንደኛ ደረጃ ት/ቤቶች የሚውል ይሆናል፡፡ ጥያቄው በኮድ ስለሆነ ምንም የልጅዎን መልስ ከልጅዎ ጋር የሚያያዝ ነገር አይኖርም፡፡

የተሳታፊው መብት፡-

በዚህ ጥናት ለመሳተፍ ሙሉ ፈቃደኝነት ያስፈልጋል፡፡ በዚህ ጥናት ልጅዎ የመሳተፍ ወይም ያለመሳተፍ ሙሉ መብት አለው/አላት፡፡ ልጅዎ ለመሳተፍ ካልፈለገ/ች ደግሞ በማንኛውም ጊዜ በመሀል ራሱን/ራሷን ከጥናቱ ማግለል(ማቋረጥ) ይችላል/ትችላለች፡፡ ካቋረጥኩኝ ጥቅም ይነልብኛል ብሎ/ላ ማሰብ የለበትም/የለባትም፡፡ መመለስ

የማይፈልገውን/የማትፈልገውን ማንኛውም ጥያቄ ለመመለስ አይገደድም/አትገደድም፡፡ ጥናቱን በተመለከተ ጥያቄ ወይም የሚያሳስበዎት ነገር ካለ የሚመለከተውን ሰው ከዚህ በታች በሰፈረው አድራሻ ማግኘት ይችላሉ፡፡

ዋና አጥኚ አድራሻ፡

ስም፡መብራ ቱታደሰ

አድራሻ፡ድሬዳዋ.

ሞባይል፡**09-10-04-05-62**

የሐረማያ ዩኒቨርሲቲ ኢትክስ ኮሚቴ

ሐረማያ ዩኒቨርሲቲ

ፖ. ሣ.ቁ፡ 235

ስልክ ቁጥር፡**025-6661899**

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አፕንዴክስ:በፈቃደኝነት ላይ የተመሰረተ የስምምነት ማረጋገጫ ፎርም

የተሳታፊው መረጃ ፎርም ተነቦልኛል፡፡ የጥናቱ ዓላማ ያለውን ጉዳትና ጥቅም፤ ሚስጥር አጠባበቅ፤ የመሳተፍ እና ያለመሳተፍ መብት እንዲሁም ችግር ካለ ከማን ጋር መገናኘት እንዳለብኝ ሁሉ ተገልጾልኛ፤ ጥያቄ ካለኝ ደግሞ እንዲጠይቅ እድልተሰጥቶኝ በመሀል ደግሞ ልጄ ጥናቱን ለማቆም ከፈለገ/ች በማንኛውም ጊዜ ከጥናቱ/ ከተሳታፊነት/ መውጣት እንደሚችል/ እሚትችል በመጨረሻም መመለስ የማይፈልገውን/የማትፈልገውን ጥያቄያ ለመመለስ መብቱ እንዳለው/ላት ከተረዲሁኝ በኋላ በሙለ ፈቃደኝነት በዚህ ጥናት ልጄ እንዲሳተፍ/እንዲትሳተፍ የወሰንኩኝ መሆኔን ከዚህ በታች በተቀመጠው ፊርማዬ አረጋግጣለሁ፡፡

የመረጃ ሰጪ ፊርማ …… ቀን…….

የመረጃ ሰብሳቢ ፊርማ …… ቀን……

Annex 1.1: Waraqaa odeeffannoo hirmaattotaa fi foormii waliigaltee maatiif

Haramayaa Yuniniversitii

Kollejjii saayinsii Fayyaa fi Meedikaalaa

Muummee Baruumsa Digrii Lammaffaa

gaafadha. Maqaan kiyya_____ ja‟‟ama.Ani kanin hojjachaa jiru obbo Mebratu Tadesse wajjiin yoo ta‟‟u , Innis Haramaya Yuniversitii Kollejjii saayinsii Fayyaa fi Meedikaalaatti baruumsa digrii lammaffaa barachaa jira. Qorannoo kana keessatti hirmaachuu keessan isin hubachiisaa waaniin isiniif dubbisu kana xiyyeeffannaan akka na hordoftan kabajaan isin

Mata duree qorannichaa

Manneen barnoota sadarka tokoffa saayikli lammaffa waa`ee Bishaanii,Sanniteeshinii fi Hajinii fi waan kaanan walkabataan qorachuuf Bulchisa Dire Dawaa bahaa Etiiyophiyaa

Kaayyoo qorannichaa

Barattoota manneen baruumsa sadarkaa 1ffaa naanoo Dirre Dhawaa keessatti waa`ee Bishaanii,Sanniteeshinii fi Hajinii iratti beekumsa,yaada fi Hoji isaanii qorachuuf Gaffilee qopha`ee

Barbaachisummaa qorannichaa

Qorannoon kun ka barbaachise ga‟‟uumsa digrii lammaffaa fayyaa hawaasummaatiif yoo ta‟‟u, yeroo muraasa keessatti Manneen baruumsa sadarkaa 1faa magaalaa Dirre Dhawaatti tamsaasa gar-maleetii fi sababoota walitti hidhata qabaniin ni mullisa. Waan kana ta‟‟eef qorannichi bu‟‟a qabeessaa fi namoota qorannichaan walqabatee fayyaa irratti karoorfatanii fi hojjataniif akka bu‟‟uraatti nigargaara.

Adeemsaa fi yeroo qorannichaaf darbaachisu

Arra kaniin dhufe, barattoota manneen baruumsa sadarkaa 1faa sayeekilla laamaafa magaalaa Dirre Dhawaa baratonni waa`ee Bishaanii,Sanniteeshinii fi Hajinii iratti beekumsa,yaada fi Hoji isaanii qorachuuf Gaffilee 36 qopha`ee sababoota walitti hidhata qabaniin ilaachisee odeeffannoo sassaabuufi. Odeeffannoo sassaabanii xumuruuf daqiiqaa 70 ni fudhata. Hamma dandeessanitti gaaffii hundaa ni deebistu jannee yaanna.

Miidhaa fi bu’aa qorannichaa

Qorannoo kana irratti hirmaachuun homaa miidhaa sirra hin geessisu ykn balaan isaa baay‟ee xiqqaadha.Qorannoo kana irratti hirmaachuu fi gaaffiilee deebiftaniif wanti kallattiin isinii herregamu hin jiru.Garuu , hirmaannaan keessan ykn odeeffannoon isinirraa argamu ittsaa fi to‟annaa ulfnina garmalee gidduu ijoollee barattoota magaalaa Dirre Dhawaafooyyeessuuf baay‟ee gargaara.

Iccitii:

Odeeffannoon isin nuuf kennitan iciitiidhaan qabama.Odeeffannoon addaan baasee isin ibsu tokkollee hin jiru. Firiin Qorannoo kanaa kan walii gala hawaasa kanaati. Kanaafuu, firiin nama dhuunfaa mul‟isu hin jiru. Maqaa hirmaattotaa akka hin mul‟ifneef, gaaffileen koodiin ibsamu.Ragaan odeeffannoo hirmaattotaa fi qorannicha walitti fidu, afaaniinis ta‟e barreefamaan hin fudhatamu.

Mirga: Qorannoo kana irratti hirmaachuun fedhinnaa irratti waan hundaa‟eef,mirga qorannicharratti hirmaachuu diduu ykn yoo gaafiin isintti hin tolin deebisuu diduu guutuu qabdu. Yeroo barbaaddanitti adeemsa qorannichaa addaan kutuufiis mirga guutuu qabdu. Yeroo kamittuu waa‟ee qorannichaa ykn adeemsa isaa irratti gaaffii ykn yaada kamiyyuu yoo qabaattan, Kanneen armaan gadii argachuu ni dandeessu.

Qorataa: Teessoo: Waajjira Garee sirna Qorannoo mirkaneessaa
Maqaa: Mebratu Tadesse HaramaayaaYuniversitii
Teessoo:Dire Dawa koolleejjii saayinsii fayyaa fi Meedikaalaa
Lak. Bilbilaa:0910040562 Bilbila:025-6661899
E-mailii:mebreyoseph@gmail.com L.S.P., 235

Labsii Fedhii walii galtee agarsiisu

Waraqaan odeeffannoo hirmaattotaa naaf dubbifameera.Barbaachisummaa qorannichaa, Raawwii isaa, Miidhaa fi Bu‟aa isaa, waa‟ee icciitii, mirga hirmaachuu fi Teessoo fi karaalee wal quunnamtii haalaan hubadheera. Wanta naaf hin galle kamiyyuu gaafachuuf carraan naaf kennameera. Yeroon barbaaddetti odeeffannoo kennuu koo addaan kutuus ta‟e gaaffileen deebisuu hin barbaanne deebisuu dhiisuuf mirga akkaan qabu natti himameera.

Kanaafuu Fedhii kootiin Qorannoo kana irratti hirmaachuuf walii galuu koo mallattoo kootiin armaan gaditti nan mirkaneessa.

Mallattoo abbaa odeeffannoo_____ Date ___/_____/_____ Mallattoo odeeffannoo funaanaa_____ Date ___/_____/_____

Annex 1.1: Waraaqda kaqaybgalayaasha xogta iyo ogolaanshaha foomka daraasadka kaqaybgalayasha.

Magacaygu waa ---------- waxaan lashaqaynayaa Mebratu Tadesse oo samaynaya cilmibaadhista loogabaahanyahay shahaadada Qalinjabinta Mastareydka ee culuunta Caafimadka Bulshada ee Jaamacada Haramaya. Maanta waxaan gurigiina idiinku soobooqday in aan idiinka ururiyo xog kusahabsan buurida aan caadiga ahayn ee caruurta

Magaca Daraasada.

Dugsiga hoose-dhexe ee ismaa mulka dir-dhaba aydayda ku sugani fikirka iyo aqoonta ayka qabaan nadaafadda `caafimaad eebiy aha fala qayntiisa ku salaysan

Ujeedada Daraasadka

Daraasaad ku saabsan Heerarka uu soo maray Buurida aan caadiga ahayn ee caruurta dugsiyada hoose ee magaalada Diridhbe

Sababta Daraasadkaa

Cilmibaadhistani waxaa loogabaahanyahay Shahaadada Masteraydka Caafimaadka bulshada islamarkaana waxaa lagu eegayaa halka uu taaganyahay buurida aan caadiga ahayn ee iskulada hoose ee diridhabe Hadaba Daraasaadkani waa mid faa‟ido wayn leh waxa uuna ugogol xaadhayaa qorshediyaariyayaasha caafimadka ee heer deegaan.

Nidaamka iyo Wakhtiga

Manta, halkan waxaan ujoogaa in aan ururiyo xog dheerada oo la xidhidha gudniinka fircooniga iyo waxyaabaha 36 horseedka u ah deegaanka soomaalida itoobiya ismaa, mulka soomaalida bariga Itoobiya, xogtasi oo lagu dhamaystiri doono mudo 70 daqiiqadood.waxaan kaa codsandoonaa inaad wakhtigaag iihurto

Faa’iidada iyo khasaraha darasaadka

Ka qaybgalida darasadkan iyo jawaabcilinta daraadaadkani,kama heli doontaan faiido toos ah. SPIkastaba ha ahaatee, wuxuu inaga caawindoonaa sidii kor loogu qaadi lahaa ka hortaga iyo xakamaynta dhibaatooyinka la xidhiidha gudniinka gabdhaha, iyaadoo lagu salayndoono xogtalaga hello qoyskaaga. Hadaba ka qaybqadashadu kuma lug yeelandoonto wax dhibaato ah oo la ogyahay, marka lagareebo dhibyar oo xaga wakhtiga aad na siinaysid.

Qarsoonida

KaqaybgalkaDaraasadkanPIwaa mid kusalaysan ikhtiyaarkaaga, Xilikasta waxa aad xaq uleedahay in aad iska dayso ood Joojiso xog ururintan.Sikastaba Ha ahaate xog ta aad isiinayso oo dhanPIwaxay ahaan doonaan kuwo aan hayn doono dhiginadoono meel

haboon oo qarsoon.Marka waxaa loobaahanyahay in aanad arintan iyada ah kawalwalin.UmabaahnPIin aan magacaaga qorro mana qorayo magacaaga ama waxyaale kale waxa aan sheegPIdoona uun xogta saxda ah.

Xuquuqda (Rights)

Kaqaybgalka DaraasadkanPIwaa mid kusalaysan akhtiyaarkaaga waxa aad xaq uleedahay in aad diido kaqaybgalkaaga daraasadkanPIamaba waxaad xaq uleedahay in aanad kajawaabin su aashayda hadIIaanad kuqanacsanayn xog ururintan.Waxa aad xaq buuxa uleedahay in aad joojiso xogtanPIwakhtPIkasta. HaddIIaad hayso wax su.aala ama wax laxidhiidha daraasadkanPIwaxa aad laxidhiidhikartaa qofka ay khusayso ood kahelikarto adhireeska hoosta kuqoran.

Kooraa hagua caaklee — Jaamacada Haramaya IRERC

Magaca: Mebratu Tadesse — Jaamacada Haramaya

Ciwaanka : — Po. Box 235

Tel: 0910040562 — Tel 025-6661899

E-mail:mebreyoseph@gmail.com — kolliigka faayya Synisgak

Xaqiijinta ogolasho xog ururin

Waxaan sPIfiican u fahmay in ay ujeedada darasaadkan tahay ururin xog kusahabsan cayilaada ama buurnida caruurta gaar ahaan kuwa dhigta dugsiyada gaarka looleeyahay ee kuyaala magaalada jigjiga ee bariga Itoopiya iyo waxyaabaha sababa. Waxaan xaqiijinaya in aan akhriyey qoraalka kor ku xusan oo dhan ama la IIakhriyey.Waxaana la isiiyey fursad aan su‟aalo ku wadiiyo wxaan garan waayeyna laiga siiyey faafahin buuxda ismarkaasna la iiga jawaabay sifiican.kaqaybqadashadayduna waxay ahayd mid ku sallaysan rabitaankayga

Waxaana lay ogaysiiyey inaan xaq u leehay inaan kabixPIkaro ka qaybqadashada daraasadkan markaan anu rabo oon la igu qasbin inaan sIIwado

Saxeexa Mulkiilaha xogtani_____ Bisha ___/_____/_____

Saxeexa Xog ururiyaha _____Bisha_____/_____

Annex1.2:Information sheet and Informed consent form for primary school principals

Haramaya university college of health and medical science

Information Sheet and Informed Consent Form For Primary School principals

My name is _____. I am working as a data collector for the study being conducted in this school by Ato Mebratu Tadesse who is studying for his master's degree at Haramaya University, the college of Health and Medical sciences. I am kindly requesting you to lend me your attention to explain you about the study and your school being selected for the study.

The study project title:

Factors influencing Water, Sanitation and Hygiene (WASH) practice among second cycle primary schoolstudents in Dire Dawa Administration, Eastern Ethiopia.

Purpose /aim of the study:

The findings of this study can be of a paramount importance for the regional Bureau of Health and Education,and for primary school managers to plan intervention programs to prevent school children WASH related health problems in your school and others; there by improve school children health problems in general. moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of a master`s program in water supply and sanitation management for the principal investigator.

Procedure and duration:

I will be interviewing your school children using a questionnaire to provide me with pertinent data that is helpful for the study. There are 36 questions to answer where I will fill the questionnaire by interviewing the school children. The interview will take about 70 minutes, so I kindly request you to allow me to do this study in your school.

Risks and benefits:

The risk of your school and the students participating in this study is very minimal, but only taking few minutes from their time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the regional Health and Education Bureau planners and for the primary school managements (principals, Administrators and soon).

Confidentiality:

The information the school children provide us will be confidential. There will be no information that will identify your school or the school children in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

Rights:

Participation for this study is fully voluntary. You have the right to allow your school child/children to participate in this study. If you decide this study to be conducted in your school you have the right to stop if you observe any misconduct in the study approach at any time and this will not label your school any loss of benefits which the school is otherwise is entitled.

Contact address:

If you have any questions or concerns about the research you can contact the concerned person with the following address given below.

Principal investigator:Address of IHRERC:

Name Mebratu Tadesse — Haramaya University

Address Dire Dawa Region, Dire Dawa — College of Health Science

Tel: 0910040562 — Tel: 025-6661899

E-mail:mebreyoseph@gmail.com — P.O.Box 235, Harar

Declaration of informed voluntary consent:

I have read the information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of allowing or not allowing school children to participate and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that my school has the right to withdraw from the study at any time if any misconduct in the research approach is observed. Therefore, I declare my voluntary consent to allow you conduct this study in this school with my initials (signature) as indicated below.

Signature of the school principal: _____ signature of data collector: _____

N.B: This is signed face to face in the presence of the data collector

Please provide a copy of this signed consent to the school principal

Annex 1.2:የት/ቤቱ ሀላፊ የመረጃ እና የስምምነት መግለጫ ቅጽ

ሀረማያ ዩኒቨርሲቲ

ህክምናና ጤና ሳይንስ ኮሌጅ

ድህረምርቃ ት/ትክፍል

ሰላም ጤና ይስጥልኝ፡፡ ስሜ---------- እባላለሁ፡፡ ዛሬ እዚህ የተገኘውት አቶ መብራቱ ታደሰ በሀረማያ ዩኒቨርስቲ በማህበረሰብ ጤና ለ2ኛ ዲግሪ ማሟያ ለሚሰራው ጥናታዊ ፅሁፍ መረጃ ስብሳቢ ሆኜ ነው፡፡ በመሆኑም ስለጥናቱ አጠቃላይ ሁኔታና ት/ቤትዎ የጥናቱ ተሳታፊ በሚሆንበት ሁኔታ ላይ ገለፃ እንዳደርግሎት በጥሞና እንዲያደምጡኝ በአክብሮት እጠይቃለሁ፡፡

የጥናቱ ርዕስ፡-በመጀመሪያ ደረጃ ሁለተኛ ሳይክል ት/ቤቶች በውሃ ሳኒቴሽንና ሃይጅን(ፆሽ) ላይ የተማሪዎች ገቢር ና ተጓዳኝ ነገሮችን መዳሰስ ድሬደዋ አስተዳደር ምስራቅ ኢትዮጵያ

የጥናቱ አስፈሊጊነት፡-

ይህ ጥናት በህብረተሰብ ጤና አጠባበቅ ለሁለተኛ ዲግሪ ማሟያ ተብሎ የተዘጋጀ ሲሆን በዚሁ አጋጣሚ ደግሞ በድሬዳዋ አስተዳደር በመጀመሪያ ደረጃ ሁለተኛ ሳይክል ት/ቤቶች የውሃ ሳኒቴሽንና ሃይጅን ሁኔታና ተጓዳኝ ነገሮችን ለማወቅ ነው። ስለዚህ ተማሪዎች የሚሰጡን መረጃ በአስተዳደሩ የት/ቤቶችን የውሀ ሳኒቴሽንና ሃይጅን ሁኔታ ለማሻሻል እየተደረገባለው ጥረት መሰረት በመሆን ያግዛል ተብሎ ይጠበቃል፡፡

የጥናቱ ሂደት እና የሚፍጀው ጊዜ፡-

ለጥናቱ ጠቃሚና አስፈሊጊ መረጃ ለማግኘት 36 ጥያቄዎችን ለመሙላት የት/ቤትዎ ተማሪዎችን ቃለመጠይቅ አደርግላቸዋለሁ፡፡ መረጃውን ለመሰብሰብ የሚፈጀው ጊዜ 70 ደቂቃ ይሆናል፡፡ ስለዚህ ተማሪዎችዎ የጥናቱ ተካፋይ ይሆኑ ዘንድ በአክብሮት እጠይቃለሁ፡፡

የጥናቱ ጉዳት እና ጥቅም፡-

በጥናቱ ውስጥ በመሳተፍ እና ጥያቄዎችን በመመለስ ቀጥታ ተማሪዎች የምያገኙት ምንም ነገር አይኖርም፡፡ ነገር ግን ተማሪዎች ጥናቱ ውስጥ በመሳተፍ እና በምሰጡን ትክክለኛ መረጃ በአስተዳደሩ የት/ቤቶችን የውሀ ሳኒቴሽንና ሃይጅን ሁኔታ ለማሻሻል እየተደረገ ባለው ጥረት ይረዳል፡፡ ተማሪዎች በጥናቱ ውስጥ በመሳተፋቸዉ የሚደርስባቸዉ ምንም አይነት የታወቀ ጉዳት አይኖርም፡፡

ሚስጥር ስለመጠበቅ፡-

ተማሪዎች የሚሰጡን መረጃ ሁሉ ሚስጢርነቱ የተጠበቀ ነው፡፡ ለዚህም ተማሪዎችን የሚገልጽ ምንም ነገር የለም፣ የጥናቱ ውጤት ለግለሰብ ወይም ደግሞ ለተወሰነት/ቤት ሳይሆን ለአጠቃላይ አንደኛ ደረጃ ት/ቤቶች የሚውል ይሆናል፡፡ ጥያቄው በኮድ ስለሆነ ምንም የተማሪዎችን መልስ ከተማሪዎች ጋር የሚያያዝ ነገር አይኖርም፡፡

የተሳታፊው መብት፡-
በዚህ ጥናት ለመሳተፍ ሙሉ ፈቃደኝነት ያስፈልጋል፡፡ በዚህ ጥናት ተማሪዎች የመሳተፍ ወይም ያለመሳተፍ ሙሉ መብት አላቸዉ፡፡ ተማሪዎች ለመሳተፍ ካልፈለጉ ደግሞ በማንኛውም ጊዜ በመሀል ራሳቸዉን ከጥናቱ ማግለል (ማቋረጥ) ይችላሉ፡፡ ካቋረጥኩኝ ጥቅም ይጎልብኛል ብለው ማሰብ የለባቸዉም፡፡ መመለስ የማይፈልጉትን ማንኛውም ጥያቄ ለመመለስ አይገደዱም፡፡ ጥናቱን በተመለከተ ጥያቄ ወይም የሚያሳስበዎት ነገር ካለ የሚመለከተውን ሰው ከዚህ በታች በሰፈረው አድራሻ ማግኘት ይችላሉ፡፡

ዋና አጥኚ አድራሻ፡
ስም፡መብራቱ ታደሰ
አድራሻ፡ድሬዳዋ
ሞባይል፡**09-10-04-05-62**
E-mail:mebreyoseph@gmail.com

የሐረማያ ዩኒቨርሲቲ ኢትክስ ኮሚቴ፡
ሐረማያዩኒቨርሲቲ
ፖ. ሣ.ቁ፡ 235
ስልክቁጥር፡**025-6661899**

አፕንዴክስ: በፈቃደኝነት ላይ የተመሰረተ የስምምነት ማረጋገጫ ፎርም

የተሳታፊው መረጃ ፎርም ተነቦልኛል፡፡ የጥናቱ ዓላማ ያለውን ጉዳትና ጥቅም፤ ሚስጥር አጠባበቅ የመሳተፍ እና ያለመሳተፍ መብት እንዲሁም ችግር ካለ ከማን ጋር መገናኘት እንዳለብኝ ሁሉ ተገልጾኛል ጥያቄ ካለኝ ደግሞ እንድጠይቅ እድል ተሰጥቶኝ በመሀል ደግሞ ተማሪዎች ጥናቱን ለማቆም ከፈለጉ በማንኛውም ጊዜ ከጥናቱ/ከተሳታፊነት/መውጣት እንደሚችል/እሚትችል በመጨረሻም መመለስ የማይፈልጉትን ጥያቄያ ለመመለስ መብቱ እንዳላቸዉ ከተረዲሁኝ በኋላ በሙሉ ፈቃደኝነት በዚህ ጥናት ተማሪዎች እንዲሳተፉ የወሰንኩኝ መሆኔን ከዚህ በታች በተቀመጠው ፊርማዬ አረጋግጣለሁ፡፡

የመረጃ ሰጪ ፊርማ …… ቀን…….

የመረጃ ሰብሳቢ ፊርማ …… ቀን……

Annex 1.2. Waraqaa odeeffannoo hirmaattotaa fi foormii waliigaltee duree mannbarnootatiif

Haramayaa Yuniniversitii

Kollejjii saayinsii Fayyaa fi Meedikaalaa

Muummee Baruumsa Digrii Lammaffaa

Maqaan kiyya_____ ja‟ama.Ani kanin hojjachaa jiru obbo Mebratu Tadesse wajjiin yoo ta‟u , Innis Haramaya Yuniversitii Kollejjii saayinsii Fayyaa fi Meedikaalaatti baruumsa digrii lammaffaa barachaa jira. Qorannoo kana keessatti hirmaachuu keessan isin hubachiisaa waaniin isiniif dubbisu kana xiyyeeffannaan akka na hordoftan kabajaan isin gaafadha.

Mata duree qorannichaa

Manneen barnoota sadarka tokoffa saayikli lammaffa waa`ee Bishaanii,Sanniteeshinii fi Hajinii fi waan kaanan walkabataan qorachuuf Bulchisa Dire Dawaa bahaa Etiiyophiyaa

Kaayyoo qorannichaa

Manneen baruumsa sadarkaa 1ffaa naanoo Dirre Dhawaa keessatti waa`ee Bishaanii,Sanniteeshinii fi hayijinii fi kanaan wan walqabatuu qorachuuf bahaa Etoophiyaa

Barbaachisummaa qorannichaa

Qorannoon kun ka barbaachise ga‟uumsa digrii lammaffaa fayyaa hawaasummaatiif yoo ta‟u, yeroo muraasa keessatti Manneen baruumsa sadarkaa 1faa magaalaa Dirre Dhawaatti waa`ee Bishaanii,Sanniteeshinii fihayijii fi sababoota walitti hidhata qabaniin ni mullisa. Waan kana ta‟eef qorannichi bu‟a qabeessaa fi namoota qorannichaan walqabatee fayyaa irratti karoorfatanii fi hojjataniif akka bu‟uraatti nigargaara.

Adeemsaa fi yeroo qorannichaaf darbaachisu

Arra kaniin dhufe, barattoota manneen baruumsa sadarkaa 1faa magaalaa Dirre Dhawaa waa`ee Bishaanii,Sanniteeshinii fi sababoota walitti hidhata qabaniin ilaachisee odeeffannoo sassaabuufi gafilee 36 qophaajirra. Odeeffannoo sassaabanii xumuruuf daqiiqaa 70ni fudhata. Hamma dandeessanitti gaaffii hundaa ni deebistu jannee yaanna.

Miidhaa fi bu’aa qorannichaa

Qorannoo kana irratti hirmaachuun homaa miidhaa sirra hin geessisu ykn balaan isaa baay‟ee xiqqaadha.Qorannoo kana irratti hirmaachuu fi gaaffiilee deebiftaniif wanti

kallattiin isinii herregamu hin jiru.Garuu , hirmaannaan keessan ykn odeeffannoon isinirraa argamu ittsaa fi to‟annaa ulfnina garmalee gidduu ijoollee barattoota magaalaa Dirre Dhawaafooyyeessuuf baay‟ee gargaara.

Iccitii:

Odeeffannoon isin nuuf kennitan iciitiidhaan qabama.Odeeffannoon addaan baasee isin ibsu tokkollee hin jiru. Firiin Qorannoo kanaa kan walii gala hawaasa kanaati. Kanaafuu, firiin nama dhuunfaa mul‟isu hin jiru. Maqaa hirmaattotaa akka hin mul‟ifneef, gaaffileen koodiin ibsamu.Ragaan odeeffannoo hirmaattotaa fi qorannicha walitti fidu, afaaniinis ta‟e barreefamaan hin fudhatamu.

Mirga: Qorannoo kana irratti hirmaachuun fedhinnaa irratti waan hundaa‟eef,mirga qorannicharratti hirmaachuu diduu ykn yoo gaafiin isintti hin tolin deebisuu diduu guutuu qabdu. Yeroo barbaaddanitti adeemsa qorannichaa addaan kutuufiis mirga guutuu qabdu. Yeroo kamittuu waa‟ee qorannichaa ykn adeemsa isaa irratti gaaffii ykn yaada kamiyyuu yoo qabaattan, Kanneen armaan gadii argachuu ni dandeessu.

Qorataa: Teessoo: Waajjira Garee sirna Qorannoo mirkaneessaa
Maqaa: Mebratu Tadesse HaramaayaaYuniversitii
Teessoo:Dire Dawa koolleejjii saayinsii fayyaa fi Meedikaalaa
Lak. Bilbilaa:0910040562 Bilbila:025-6661899
E-mailii:mebreyoseph@gmail.com L.S.P., 235

Labsii Fedhii walii galtee agarsiisu

Waraqaan odeeffannoo hirmaattotaa naaf dubbifameera.Barbaachisummaa qorannichaa, Raawwii isaa, Miidhaa fi Bu‟aa isaa, waa‟ee icciitii, mirga hirmaachuu fi Teessoo fi karaalee wal quunnamtii haalaan hubadheera. Wanta naaf hin galle kamiyyuu gaafachuuf carraan naaf kennameera. Yeroon barbaaddetti odeeffannoo kennuu koo addaan kutuus ta‟e gaaffileen deebisuu hin barbaanne deebisuu dhiisuuf mirga akkaan qabu natti himameera.

Kanaafuu Fedhii kootiin Qorannoo kana irratti hirmaachuuf walii galuu koo mallattoo kootiin armaan gaditti nan mirkaneessa.

Mallattoo abbaa odeeffannoo_____ Date ___/_____/_____

Mallattoo odeeffannoo funaanaa_____ Date ___/_____/_____

Annex1.2 Waraaqda kaqaybgalayaasha xogta iyo ogolaanshaha foomka daraasadka kaqaybgalayasha.

Magacaygu waa ---------- waxaan lashaqaynayaa Mebratu Tadesse oo samaynaya cilmibaadhista loogabaahanyahay shahaadada Qalinjabinta Mastareydka ee culuunta Caafimadka Bulshada ee Jaamacada Haramaya. Maanta waxaan gurigiina idiinku soobooqday in aan idiinka ururiyo xog kusahabsan buurida aan caadiga ahayn ee caruurta

Magaca Daraasada.

Dugsiga hoose-dhexe ee ismaa mulka dir-dhaba aydayda ku sugani fikirka iyo aqoonta ay ka qabaan nadaafadda `caafimaad eebiy aha fala qayntiisa ku salaysan

Ujeedada Daraasadka

Daraasaad ku saabsan Heerarka uu soo maray Buurida aan caadiga ahayn ee caruurta dugsiyada hoose ee magaalada Diridhbe

Sababta Daraasadkaa

Cilmibaadhistani waxaa loogabaahanyahay Shahaadada Masteraydka Caafimaadka bulshada islamarkaana waxaa lagu eegayaa halka uu taaganyahay buurida aan caadiga ahayn ee iskulada hoose ee diridhabe Hadaba Daraasaadkani waa mid faa‟ido wayn leh waxa uuna ugogol xaadhayaa qorshediyaariyayaasha caafimadka ee heer deegaan.

Nidaamka iyo Wakhtiga

Manta, halkan waxaan ujoogaa in aan ururiyo xog dheerada oo la xidhidha gudniinka fircooniga iyo waxyaabaha 36 horseedka u ah deegaanka soomaalida itoobiya ismaa, mulka soomaalida bariga Itoobiya, xogtasi oo lagu dhamaystiri doono mudo 70 daqiiqadood.waxaan kaa codsandoonaa inaad wakhtigaag iihurto

Faa’iidada iyo khasaraha darasaadka

Ka qaybgalida darasadkan iyo jawaabcilinta daraadaadkani,kama heli doontaan faiido toos ah. SPIkastaba ha ahaatee, wuxuu inaga caawindoonaa sidii kor loogu qaadi lahaa ka hortaga iyo xakamaynta dhibaatooyinka la xidhiidha gudniinka gabdhaha, iyaadoo lagu salayndoono xogtalaga hello qoyskaaga. Hadaba ka qaybqadashadu kuma lug yeelandoonto wax dhibaato ah oo la ogyahay, marka lagareebo dhibyar oo xaga wakhtiga aad na siinaysid.

Qarsoonida

KaqaybgalkaDaraasadkanPIwaa mid kusalaysan ikhtiyaarkaaga, Xilikasta waxa aad xaq uleedahay in aad iska dayso ood Joojiso xog ururintan.Sikastaba Ha ahaate xog ta aad isiinayso oo dhanPIwaxay ahaan doonaan kuwo aan hayn doono dhiginadoono meel

haboon oo qarsoon.Marka waxaa loobaahanyahay in aanad arintan iyada ah kawalwalin.UmabaahnPIin aan magacaaga qorro mana qorayo magacaaga ama waxyaale kale waxa aan sheegPIdoona uun xogta saxda ah.

Xuquuqda (Rights)

Kaqaybgalka DaraasadkanPIwaa mid kusalaysan akhtiyaarkaaga waxa aad xaq uleedahay in aad diido kaqaybgalkaaga daraasadkanPIamaba waxaad xaq uleedahay in aanad kajawaabin su aashayda hadIIaanad kuqanacsanayn xog ururintan.Waxa aad xaq buuxa uleedahay in aad joojiso xogtanPIwakhtPIkasta. HaddIIaad hayso wax su.aala ama wax laxidhiidha daraasadkanPIwaxa aad laxidhiidhikartaa qofka ay khusayso ood kahelikarto adhireeska hoosta kuqoran.

Kooraa hagua caaklee	Jaamacada Haramaya IRERC
Magaca: Mebratu Tadesse	Jaamacada Haramaya
Ciwaanka :	Po. Box 235
Tel: 0910040562	Tel 025-6661899
E-mail:mebreyoseph@gmail.com	kolliigka faayya Synisgak

7.4.1.Xaqiijinta ogolasho xog ururin

Waxaan sPIfiican u fahmay in ay ujeedada darasaadkan tahay ururin xog kusahabsan cayilaada ama buurnida caruurta gaar ahaan kuwa dhigta dugsiyada gaarka looleeyahay ee kuyaala magaalada jigjiga ee bariga Itoopiya iyo waxyaabaha sababa. Waxaan xaqiijinaya in aan akhriyey qoraalka kor ku xusan oo dhan ama la IIakhriyey.Waxaana la isiiyey fursad aan su‟aalo ku wadiiyo wxaan garan waayeyna laiga siiyey faafahin buuxda ismarkaasna la iiga jawaabay sifiican.kaqaybqadashadayduna waxay ahayd mid ku sallaysan rabitaankayga

Waxaana lay ogaysiiyey inaan xaq u leehay inaan kabixPIkaro ka qaybqadashada daraasadkan markaan anu rabo oon la igu qasbin inaan sIIwado

Saxeexa Mulkiilaha xogtani_____ Bisha ___/_____/_____

Saxeexa Xog ururiyaha _____Bisha_____/_____

Annexes2: Questionnaire and check list

Annex 2.1 Questionnaire

Haramaya university college of health and medical science

Questionnaire prepared to assess KAP of second cycle primary schoolstudents (grade five to eight) towards WASH in Dire Dawa Administration, Ethiopia

Part A: General information

Region_____ Keble _____ Name of school_____

School location: Urban_____ Rural _____ School type: Public_____ Private____

Respondent: Sex ____ Age ___ Educational status (grade) _____

Name of interviewer _____ signature _____ Date _____

Part B: questionnaire to assess Knowledge, Attitude and Practice (KAP) of WASH

S/N	QUESTIONS	RESPONSE	SKIP
	HAND WASHING QUESTIONS		
1	Do you think if you don't wash your hands after going to toilet, could you get germs?	Yes……...1 No……2 Uncertain …..……..3	
2	Do you know When it is important to wash your hands?	Yes……...1 No……2 →	4
		Don't know……..3 →	4
3	If yes, when? (Multiple response is possible)	Washing before eating….1 Washing after eating ……2 Washing after defecation..3	
4	Do you know washing your hands with soap better than water only in diseases prevention?	Yes……1 No…….2 Do not know……..…3	
5	Do you know hand washing is important for preventing some WASH-related diseases?	Yes……1 No…….2 Uncertain……..3	
6	Do you think If people don't wash their hands more often they will get sick?	Yes……1 No…….2 Uncertain……..3	
7	Do you usually wash your hand with soap and water?	Yes……1 No…….2 →	10
8	When do you wash your hands with soap and water?(multiple response is possible)	Before eating……1 After eating……..2 After defecation……...3	
9	Do you believe that washing hands just with water and soap is as good as washing hands with water?	Yes……...1 No…….2 Uncertain……..3	
10	Why not washing your hands? (multiple response is possible)	Not important……...1 Forgetfulness……....2 Laziness……3 Lack of time……..4 Lack of clean water……..5 Lack of soap……6 Don't know……..7	

	WATER SUPPLY QUESTIONS		
11	Do you know that the importance of using safe water for preventing some WASH-related diseases?	Yes……1 No…….2 Don't know……...3	
12	Do you know drinking water should never be touched as your hands have dirty?	Yes……1 No…….2 Don't know……...3	
13	Do you think boiling water kills germs?	Yes……1 No…….2 Uncertain……...3	
14	Do you think water container needs cleaning and covering?	Yes……1 No…….2 Uncertain……..3	
15	Do you know that treating water in any way to make it safer to drink is important?	Yes……1 No…….2 Do not know…….3	
16	What do you usually do the water to make it safer to drink?	Boil……1 Add bleach/chlorine……..2 Use a water filter……...3	
17	Did you usually use safe water/potable water?	Yes……1 No…….2	
18	Have you ever cleaned and cover water container?	Yes…..……..1 No …….2	
19	Have you touched drinking water as your hands have dirty?	Yes……1 No…….2	
	SANITATION QUESTIONS		
20	Do you think human faeces contain germs**?**	Yes……1 No…….2 Uncertain……...3	
21	Do you think germs can be transmitted from toilets by direct contact with or indirectly with contaminated hands, or via insects?	Yes……1 No…….2 Uncertain……..3	
22	Do you know importance of using toilet for preventing some WASH-related diseases?	Yes……1 No…….2 Don't know……...3	
23	Do you know proper latrine usage is better than getting medication for diarrhoea?	Yes……1 No…….2 Do not know……..3	
24	Do you think Open defecation may cause germs to spread?	Yes……1 No…….2 Uncertain……...3	
25	Did you usually use latrine/toilet?	Yes……1 No…….2	
26	Is a latrine available at school?	Yes……1 No…….2→	30
27	Do you use school toilet?	Always……1→ Sometimes……2→ Never……3	29 29

28	Why?	Toilets are dirty……1 Toilet smells are bad……2 No privacy……3 Others(specify……..4	
29	When you are at school, do you ever defecate/urinate outside the school toilets?	Yes …..…….1 No….……2	
30	Where do you usually go to defecate/urinate when you do not use school toilet?	Home latrine…….1 Church/Mosque latrine….2 Communal latrine…….3 Open field……4	
31	Do you think: A. Playing near waste disposal places is dangerous for health? B. Eating not well-cooked/ washed food affect health? C. Eating food sold on street can leads to diseases? D. Fruits and vegetables that look clean need to be washed before eating? E. Drinking with shared cup can be transmitting diseases?	Yes No uncertain 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3	
32	Did not you ever: A. playing near waste disposal places? B. eating not well-cooked/ washed food? C. eating food sold on street? D. eating fruits and vegetables that look clean without washing? E.drinking with shared cup/bottle?	Yes No 1 2 1 2 1 2 1 2 1 2	
	HYGIENE QUESTIONS		
33	Have you ever trained in hygiene and sanitation?	Yes……1 No…….2	
34	Do you know practicing hygiene activities reduce incidence of WASH-related diseases?	Yes……1 No…….2 do not know……..3	
35	Do you clean your teeth always?	Yes……1 No ……2	
36	Do you practiced the following personal hygiene activities at least once a week ➢ Taking bath? ➢ Washing clothes? ➢ Cleaning hair?	Yes No 1 2 1 2 1 2	

<u>ለሀሮማያ ዩኒቨርስቲ የጤና እና ህክምና ኮሌጅ</u>

<u>በድሬዳዋ አስተዳደር በመጀመሪያ ደረጃ ት/ቤቶች የሁለተኛ ኤደት (ከ5ኛ አስከ 8ኛክፍል) ተማሪዎች ስለውሃ ሳኒቴሽንና ሃይጅን ያላቸውን እውቀት፤ አስተሳሰብና ገቢር ለመዳሰስ የተዘጋጀ መጠይቅ</u>

ክፍል አንድ፤ጠቅላላ መረጃ

የትምህርት ቤቱ ስም ……ት/ቤቱየሚገኝበትቦታ፡ከተማ----------ገጠር--------

የት/ቤቱባለቤት፡መንግስት……ግለሰብ/የመንግስት ያልሆነ…….

ክልል……ቀበሌ……

የተማሪው የትምህርት ደረጃ (ክፍል)……

የተማሪው እድሜ ……ዕታ…….....

የጠያቂው ስም……ፊርማ……..

መጠይቁ የተሞላበት ቀን……..

ክፍል ሁለት፤ስለውሃ፤ ሳኒቴሽንና ሃይጅን እውቀት አስተሳሰብና ገቢር የሚዳስስ መጠይቅ

ተ.ቁ	ጥያቄ	መልስ	መሻገርያ
	የእጅ መታጠብ መጠይቅ		
1	ከተደጻጹ በኑላ እጅዎን በይታጠቡ ጀርም ያገኝዎታል?	አዎ……1 የለም……2 አላዉቅም ……3	
2	እጅዎን በውሃናበሳሙና መታጠብ የሚያስፈልገዉ መቼ እንደሆነ ያቃሉ?	አዎ……1 የለም……2 → 4 ምንም አላዉቅም……3 → 4	
3	እጅዎን በውሃና በሳሙና የሚታጠቡት መቼነው ? **ገፋፋ፤** ሌላመቼ ?	ምግብ ከመመገብዎበፊት ……1 ምግብ ከተመገቡበኋላ……2 መጸዳጃ ቤት ከተጠቀሙበኋላ……3	
4	እጅን በሳሙና መታጠብ በዉሃ ብቻ ከመታጠብ ይልቅ በሽታን እንሚከከል ዉቃሉ?	አዎ……1 የለም……2 ምንም አላዉቅም……3	
5	እጅዎን በውሃና በሳሙና መታጠብ ከዋሽ በሽታ ይከላከላል?	አዎ……1 የለም……2 አላዉቅም ……3	

6	ሰዎች እጃቸዉን የመይታጠቡ ከሆነ እንደምታመሙ ያዉቃሉ?	አዎ.....1 የለም.....2 አላዉቅም.....3	
7	እጅዎን በዉሃና በሳሙና ሁል ጊዜ ይታጠባሉ?	አዎ.....1 የለም.....2 →	10
8	እጅዎን በዉሃና በሳሙና የሚታጠቡት መቼ ነዉ?	ምግብ ከመመገብ በፊት እጅን በውሃና በሳሙና መታጠብ.....1 ምግብከተመገቡ በኋላ እጅንበውሃና በሳሙና መታጠብ.....2 ከመፀዳጃ ቤት በኋላ እጅን በውሃና በሳሙና መታጠብ.....3	
9	እጅን በሳሙና መታጠብና በዉሃ ብቻ መታጠብ አብድ ነዉ?	አዎ.....1 የለም.....2 እርግጠኛ አይደለሁም.....3	
10	እጅዎን ለምንድነዉ ያልታጠቡት?	አስፈላጊ ሰላልሆነ.....1 ረሰቼ.....2 ስንፍና.....3 ጊዜ አጥቼ.....4 ነዱህ ወሃ አጥቼ.....5 ሳሙና አጥቼ.....6 አላዉቅም.....7	
	የዉሃ መጠይቅ		
11	የዋሽ በሽታን ለመከላከል የንዱህ ዉሀ አስፈላጊነትን ያዉቃሉ?	አዎ.....1 የለም.....2 አለዉቅም.....3	
12	የመጠጥ ዉሀ በቆሻሻ እጅ መነካት እንደለሌበት ያዉቃሉ?	አዎ.....1 የለም.....2 አለዉቅም.....3	
13	ዉሃን ማፍላት ረቂቅ ተህዋሲያንን ይገላል ብለዉ ያስባሉ ?	አዎ.....1 የለም.....2 እርግጠኛ አይደለሁም.....3	
14	የመጠጥ ዉሃ ማጠራቀሚያ ማዕዳትና መከደን ያስፈልጋል ብለዉ ያስባሉ?	አዎ.....1 የለም.....2 እርግጠኛ አይደለሁም.....3	
15	በማንኛዉም መንገድ ዉሃን ማከም ለመጠጥ ንዱህ ለማድረግ አሰፈላጊ መሆኑን ያዉቃሉ	አዎ.....1 የለም.....2 አለዉቅም.....3	
16	ዉሀን ንዱህ ለማድረግ ምን ያደርጋሉ?	ማፍላት.....1 ክሎሪን መጨመር.....2 መጣራት.....3	
17	ብዙ ጊዜ ንዱህ ዉሀ የጠቀማሉ?	አዎ.....1 የለም.....2	
18	የመጠጥ ዉሃ ማጠራቀሚያን አድድተዉና ከድነዉ ያዉቃሉ?	አዎ.....1 የለም.....2	
19	የመጠጥ ዉሀን በቆሻሻ እጅ ነክተዋል?	አዎ.....1 የለም.....2	
	የሳኒቴሽን መጠይቅ		
20	የሰዉ ዐይነምድር ረቂቅ ተህዋስያን አለዉ ብለዉ ያስባሉ ?	አዎ.....1 አይ.....2 እርግጠኛ አይደለሁም.....3	

21	ጀርሞች በቀጥታ/በተዘዋዋሪ በእጅ ወይም በነፍሳት ይሰራጫሉ	አዎ……1 የለም……2 እርግጠኛ አይደለሁም……3	
22	የዋሽ በሽታን ለመከላከል የመደዳጃ ቤት አስፈላጊነትነ ያዉቃሉ?	አዎ……1 የለም……2 አላዉቅም……3	
23	አግባባዊ የሆነ የመደዳጃ ቤት አጠቃቀም ከተቅማጥ ህክምና የተሻለ ነዉ ብለዉ ያስባሉ?	አዎ……1 የለም……2 አላዉቅም……3	
24	በየሜዳዉ መደዳዳት ጀርሞችን ያስራጫል ብለዉ ያሰባሉ?	አዎ……1 የለም……2 እርግጠኛ አይደለሁም……3	
25	ብዙ ጊዜ በመደዳጃ ይጠቀማሉ?	አዎ ……1 አይ……2	
26	ት/ቤታቸሁ በመጸዳጃ ቤት፡አለዉ	አዎ ……1 አይ……2 →	30
27	የትምህርት ቤቱን መጸዳጃ ቤት ይጠቀማሉ ?	ሁልጊዜ ……1 → አንዳንድ ጊዜ……2 → አይ……3	29 29
28	ለምን ?	መፀዳጃ ቤቶቹ ንፅህና ስለሌላቸው……1 መጸዳጃ ቤቶቹ ስለሚሸቱ……2 መጸዳጃ ቤቶቹ ብቸኝነት ስለማይጠብቁ……3 (የግልገመናስለማይሸፍኑ) ሌላ ……6 (ይጠቀስ)	
29	እርስዎ ትምህርት ቤት ውስጥ ከመፀዳጃ ቤት ውጪ ተፀዳድተው ያውቃሉ ?	በፍፁም……1 አንዳንድጊዜ……2 ብዙጊዜ……3 ሁልጊዜ……4	
30	የት/ቤቱን መደዳጃ የማይጠቀሙ ከሆነ ብዙ ጊዜየት ሄደዉ ይፀዳዳሉ?	በመኖሪያቤት መደዳጃ……1 ቤተክርስቲያን/መዝጊድ……2 በጋራ መደዳጃ ቤት……3 በየሜዳዉ……6	
31	በሚከተሉትን አረፍተ ነገሮች ላይ ተስማማለህ A.ቆሻሻ መጣያ ቦታ አጠገብ መጫወት ለጤና አደገኛ ነዉ B.በደንብ ያልበሰለ/ያልታጠበ ምግብ መመገብ በጤና ለይ ችግር ያመጣል C.በመንገድ ለይ የሚሸጥ ምግብ መመገብ በሽታ ያመጣል D.አትክልትና ፍራፍሬ ከመብላታችን በፊት ማጠብ ያስፈልጋል E.በጋራ መጠጫ መጠጣት ለጤና መጥፎ ነዉ	አዎ አይ እርግጠኛ አይደሉም ነ 2 3 ነ 2 3 ነ 2 3 ነ 2 3 ነ 2 3	
32	እርስዎ የሚከተሉትን አልተገበሩም፡ A.ቆሻሻ መጣያ ቦታ አጠገብ ይጫወታሉ? B.በደንብ ያልበሰለ/ያልታጠበ ምግብ ይመገባሉ? C.በመንገድ ለይ የሚሸጥ ምግብ ይመገባሉ? D.ንፅህ መስሎ የሚታይ አትክልትና ፍራፍሬ ሳያጥቡ ተመግበዉ ያዉቃሉ? E.በጋራ መጠጫ ይጠጣሉ?	አዎ አይ ነ 2 ነ 2 ነ 2 ነ 2 ነ 2	
	የሀይጅን መጠይቅ		
33	ስለሀይጅንና ሳኒቴሽ ስልጠና/ትምህርት አግኝተዋል?	አዎ……1 የለም……2	
34	የሀይጅን ስራዎችን መተግበር የዋሽ በስታን ይከላከላል?	አዎ……1 የለም……2 አላዉቅም……3	
35	ጥርስዎን ሁል ጊዜ ያፀዳሉ ?	አዎ……1 የለም……2	

36	ስለ አንዳንድ ድርጊትና ልማዶች እጠይቆታለሁ እናም ቢያንስ በሳምንት አንድ ጊዜ ይፈድማሉ? ➢ ገላን መታጠብ ➢ ልብስ ማጠብ ➢ ጸጉር ማጽደት	አዎ የለም 1 2 1 2 1 2	

Yunvarsiti Haramaya kollejii oguma fayyaa fi walansaa
Bulchinsa Dire Dawatti Manneen barnoota sadarka tokoffa saayikli lammaffa (kutaa 5ffa_8ffa) baratonni waa`ee Bishaanii,Sanniteeshinii fi Hajinii iratti beekumsa,yaada fi Hoji isaanii qorachuuf Gaffilee qopha`ee
Kuta tokkaffaa: Qabanna waigala
Maqaa
Manabarnoota_____Magalaa___Badiiyaa____
Naanoo _____
Aradda_____mannbarnoota:Motuma__Dhuffa—Kanbiro_____
Kutabarnoota barataa _____Umrii _____
saala_____Amantii _____
Mana jireenya barataa fugeenya isaa manneen barnoota`irra (sa`aatiin) _____
Guffilee kan gaafatu _____ Mallattoo _____
Gaffileen guyyaa itti guutoman _____
Kuta lamaffaa: Waa`ee Bishaanii, Saaniteeshinii fi Hajinii irratii Beekumsa,yaada fi Hojiin garsiisuu gaaffiilee qooratuu

Lakki	Gaaffiilee	Deebisaa	Tarkanfaa
	Gaflee harka dhiqaachuu		
1	Sagaraa boodaa yoo harkaa dheqaachuu`batee germ naarkatuu jete yaduu?	Ayee……1 Mittii……2 Hinbekuu……...3	
2	Haarka dheqaachuu yeroo akami akaa barbachisu bektuu?	Eeyee……1 Hinqabu……2 → 4 Hinbeeku……..3 → 4	
3	Yoo eyee jeghuu yeroo akaam?	Mana fincanidhiqachuu……..1 Bishaan qulqulluun fayyadamu……..2 Manafincaaniit fayyadamu…….3	
4	Harkaa saamun`dhaan dheqachuun bishaan`qofaa`ira dhukubaa akaanamaraa dhorkuu bektuu?	Eyee……1 Hindhoriikuu……..2 Hinbekuu……3	
5	Harkaa dhikachuun dhukuba washidhaan darbuu dhorkuf barbachisaa tauu`isaa bektuu?	Eyee……1 Hindhoriikuu……..2 Hinbekuu……3	

6	Haawseni yooharkaa dhiqachuu`yoobatee akaa`dhoqubsatuu bektuu?	Eyyee……1 Hindhuqusatuu……..2 Hinbeku……..3	
7	Yeroohundaa harkaa`kesaan samunaafi bishaanin dheqatuu?	Eyee……1 Hinkabamuu……2 →	10
8	Harka keessan bishaanifi saamunaan yoom dhiqattu?	Nyaata nyaa chuun dura……1 Nyaata eega nyaattan booda……...2 Mana fincaani eega fayadamuun Booda……3	
9	Harka saamuufi bishaanin dheqachuufi bishaan`qofaan dhiqachuun tokoo jetee yaadu?	Eeyee……1 Hinyaaduu……2 Hinbeeku……..3	
10	Harka kessan malif hinii`dhiqatin?	Wanibarbachesineef……1 Ni`iranifatu……...2 Daeefumaa……3 Hankinaa yeroo……4 Beshankulikul dhabee……..5 Saamunaa dhabee ……6 Hinbeeku……..7	

	Gaaflee Beeshanii		
11	Bishaan qulquluu`itifayadaamuni dhuquba washidhaan` darbu akaanamara dhorku bektuu?	Eyee……1 Hindhoku…….....2 Hinbekuu……3	
12	Bishaan dhugaati harkaa qusha`shaan akahintuqaminee bektuu?	Eyee……1 Tuqaamu rakohiqabuu……2 Hinbekuu……3	
13	Bishaan danfisuun germee ajesaa jetee yaduu?	Eyee……1 Hinyaduu…….....2 Hinbekuu……3	
14	Meshaan bishaan dhiquufi chuqaluu barbachisaadha jetee yaduu?	Eyee……..……..1 Hinbarbachisuu.. … ……...2 Hinbekuu ……...3	
15	Bishaan dhugaati tajajiluu yokanis hakimuu akaabrbachisu bektu?	Eyee……..……..1 Hinbarbachisuu.. … ……...2 Hinbekuu ……3	
16	Bishaan quliqulesuufi malgotu?	Danifisuu……1 Belchee itinequu……..2 Filteeri`fayidomuu……..3	
17	Meshaa bishaani quliqulesiti beketuu?	Eeyyee……1 Hinbekuu……..……2	
18	Mana barnoota kesaatti bishaan akkamitti dhugdan?	Eeyyee……1 Hinjiruu……2	
19	Harkaa qushashaan bishaan dhugaati tuqite bekituu?	Eeyyee……1 Hintuqinee……...2	
	Gaafii saneeteshinaa		
20	Boweelin naamaa geermi qabaa jetee yaadu?	Eeyyee……1 Hinnyaadu……...2 Hinbekuui……3	
21	Geermiin ?manaabowli`iraa narkan yokeenis wabiraatin darba jetee yaadu?	Eeyyee ……1 Hin fayyadamu ……...2 hinjiru……..3	
22	Manaaboweliti fayaaduun Dhuqubaa washdhaan darbura ifegudhafi fayida akaqaabu bekitu?	Eeyyee……1 Hinqaabu……2 Hinbeku…….……..3	
23	Sereeti bowli`it fayaadamuun waalanis gar deeesesa`iraa foyee tauu`isaa bektuu?	Eeyyee……1 Foyeemitii……...2 Hinbekuu…….3	

24	Direrati boweli bahuun geermi nifachaasa jetee yaadu?	Eyyee ……....1 Hin gargaaruu ……2 Hinbeku ……3	
25	Yeroohudaa manaboweliti fayaadamituu?	Harkakootin……1 Meshaa waliwojitinee……2	
26	Mannbarnootaa mannifinchanii nijeera?	Eeyyee……1 Hinjiruu……..……2→	 30
27	Manbarnootati manaboweli`iti fayaadamituu ?	yerohundaa ……1 yero took`took..……..2→ hinfayadaamu……3→	 29 29
28	Maleefi hinfayadaminee?	Quliqulu`miti……..**.....**1 Shuruufikaqabuu……2 Kobuma hinqaabu……..3 Kaniroo……..……4	
29	Manbrnootati edobowel`ira aalaati fayadamituu?	Eye……..1 Hinfayadaamu……..……..2	
30	Yoo manbarnootati fayadamin Saagaraa ffi finchaan essaati baatu?	Manaati warakenati……. ……...1 Mazigeed iffi mataskanaa ……2 Sagaara Hawaasatii ……...3 Deree`iraati……...……4	

31	gaaffi kangedii iraati yadaa keesan nuuf`ibsaa:	Eyyee	Hinkebalu	Hinbekuu	
	A.Bakaa kushasha taabchuun fayaa`raati raakofidaa?	1	2	3	
	B.Naata hinbelchaatin fayaairati raakofidaa?	1	2	3	
	C.Naata karaa`irati guriiguramu dhukuba fidaa?	1	2	3	
	D.Kuduraafi muduraa dhiqee fayya damuun?	1	2	3	
	E.Meshaa waliwojiitin dhuguni fayadhaap gaarimiti?	1	2	3	
32	Waayi asingeedii kaan hojira hin`olchinee	eyyee	Hinkebalu		
	A.Bakaa kushasha tabachuu ?	1	2		
	B.Naata hinbelchaatin naachuu?	1	2		
	C.Naata karaa`irati guriiguramu naachuu?	1	2		
	D.Kuduraafi muduraa osodh hindhiqeen faya damuu?	1	2		
	E.Meshaa waliwojiitin dhuguu?	1	2		

	Gaflee hygeenaa		
33	Hyginee iffii saniteeshnaan irratee leenjii fudhaatee?	Eyee……. ……...1 Hiifudhaanii……... ……2	
34	Hyginee hujii`ira olichuuni dhukubaa naamaa`irraa nidhorkaa?	Eyee…….……1 Hindhoorku……..……2 Hinbeeku…...……...3	
35	Ilkaan keessan yeroo huundaa qulekuleestu?	Eyee…….……1 Hinkulikulesu……...……..2	
36	Waa`ee hojjilee fi goochaa tokko tokko isiiniin gaafadha kanaafuu torbaanitti yoo`akkamtinaate yeroo tokoo: •Qaama dhiqatuu? •Uffatta mee tuu? •Qulqullina rifeensa eegduu?	Eyee Hojirahinolichinee 1 2 1 2 1 2	

Ku Laanta caafimaadka iyo dawaiynta kuliyadda jaamacadda Haramaaya
Dugsiga hoose-dhexe ee ismaa mulka dir-dhaba (fasavka 5^{aad}ilaa 8^{aad}) aydayda ku sugani fikirka iyo aqoonta ay ka qabaan nadaafadda `caafimaad eebiy aha fala qayntiisa ku salaysan

Qaybta kowaad: Caddayn guud

Degmada_____ Degmo hoosaad (Qabale) _____

Da`da ardayga _____ Jinsi _____ Diinta _____

Fogaanta guriga ardaygn dugsiga isu jiraan (saacad ahaan) _____

Magaca weydiiye _____ saxeex _____

Qaybta Labaad:Aqoon,fihireedka iyo hirgalonta ku salaysan nadaafadda biyaha ee caafid

Tiris	Weydiin	Jawaab celin	Skeep kaa
	Nadaafadda Gaffalka		
1	Xeerka man hajka guud daryeelka nadaafadda iyo cafimaad ma ku dhaqmaa?	Haa……...1 Malaha……..2	
2	Maxaad ka yeeli,calool xanuunka iyo cudurka shubanka?	Haa……...1 Malaha…….2 → 4 Ma garanaayo……..3 → 4	
3	Nadaafadda guud ee degaan iyo ba shaqsiyaad ama nadaafaddo gaar ahaaneed dar yeelkooda guud xaggee baad ka bara tay?	Saabuun ku dhaqanaa…….1 Waa in aan biyo nadiifah istiowadaa……..2 Waa in aan masqul adeegsanaa……...3	
4	Goortee baad gacmaha biyo iyo saabuun ku dhaqataa?	Haa…….1 Malaha……...2 Ma garanaayo…….3	

5	Gacmaha biyo iyo saabuun in aad ku dhaqato maxaad u adeegtay?	Haa……...1 Malaha……..2 Ma garanaayo……...3	
6	Ka dibna nadaafadahan la tibaaxay dhaxdood, kaalin toodabbaahi eek u tilmaamayo caddie?	Haa ……..1 Maya……2 Ma garanaayo……..3	
7	Goortee baad dugsiga war bixinta ku salaysay daryeel caafimaad iyo ilaalinta nadaafadda ka heshaa	Haa……..1 Malaha……2 →	10
8	Goorahee baad dugsiga arrimada la xidhiidha daryeelka nadaafad gaar ahaaneed bixiyaa?	Haa……...1 Malaha……..2 Ma garanaayo……...3	
9	Dugsiqiinu xeerka man hajka guud daryeelka nadaafadda iyo cafimaad ma ku dhaqmaa?	Haa……..1 Malaha……2 Ma garanaayo……..3	
10	Macalimiintu kaabayaashu ay caafimaadka baris- barasho u adeeqsadaan waa kuwo nooc ma ah?	Haa……...1 Malaha……2 Ma garanaayo……..3 Mar kasta……4 Dugsigeena masqual malaha……...5 Xidhiidha daryeelka nadaafad……6 Gaar ahaaneed bixiyaa……...7	
11	Dabadeedna waxa aad ra`yi kadha bataa daryeelka guud eek u aadan nadaafadda iyo shawridda cafimaad adiga oo qiimaynta kutibaajaya ?	Haa……...1 Maya……2 Malaha……3	
	Gaffalka biyoolkaa		
12	Faa`iidada daryeelka nadaafadu uu leeyahay maxaad u ma laynaysaa?	Haa……....1 Malaha……..2	
13	Waliqaa nadaafad daro masqusha dugsiga nacongurisgaaga ma la tagtay?	Maya……..1 Mar- marka qaarkood……....2 Mar badan ……..…3	

14	Adigu goob masqusha dugsiga ka baxsan ma ku baxorootay?	Ha ka yaabin……1 Mar-mar ……..2 Marar badan ……3	
15	Haddii aanad masqusha dugsiga isticmaalin xaaggee kale baad adeegsataa ?	Guriga……..1 Wadada……2 Masaajiid ama makaanisad……..3	
16	Dugsiga gudihisu biyo ma lee yoha?	Haa……...1 Malaha……..2 Ma garanaayo……...3	
17	Dugsigu biya cabitaanka xaggee buu ka helaa?	Haa……...1 Malaha……..2	
18	Gudaha dugsiga biyuhu side buu badankirsu u soo gala?	Haa……...1 Malaha…….2 Ma garanaayo……...3	
19	Gudaha dugsiga biyo maad ka helo kartaa?mise weydii mo kale baad u baahan tahay?	Haa……...1 Malaha…….2	
	Gaffalka saa`niiteshiinkaa		
20	Goobta gacmo dhaqashada dugsiga dhoxdiisa ku yaala ma adeegsataa?	Haa……...1 Malaha…….2 Ma garanaayo……...3	
21	Maxaa loo adeegsan waayay?	Haa……...1 Malaha…….2 Ma garanaayo……...3	
22	Inta aanad dhirta iyo khudaarta cunin ka hor ma dhaqdaa?	Haa……...1 Malaha…….2 Ma garanaayo……...3	
23	Daryaeeka caafimaad ee aad dugsiga ku baratay waalidadaa iyo qoyskaga Ma ka wada xaajootaan?	Haa……...1 Maya ……2 Ma garanaayo……...3	

24	Kadda waxa aan ku weydiin dhacdooyinka qaarkood sidaa daraadeed na waxa aad ku celini kan waa la fuliyay ama la ma aan fulinin baad iisheegi?	Haa ……1 Maya,……...2 Ma garanaayo……..3	
25	Dugsiga biyuhu side buu maxaad se lagu cabaa?	Haa……..1 Maya ……..2	
26	Goobaha dugsiga qaarkood waxa nadaafadda sidaa dorteed na waxa aad ku jawaad waabtaa ?	Haa……..1 Maya ……..3 → 30	
27	Dugsiga dhaxdiisa goobaha qaar kood sid ee baad utilmaami?	Adeega masquleed……..1 → 29 Aeegsiga dhaqida khudoorta……...2 → 29 Cabid la`aan biyahaan karsanayu……3	
28	Dugsiga dhaxdiisa gamihiina biyo iyo saabuun ma lagu dhaqdaa?mar kasta,marar badan,mar-mar hakayaabin, laga ma fulin karo adiqa oo len kaga jawaab?	Marka aan hurdada ka tooso……1 Marka aan seexanaayo ka hor……..2 Marka aan cuteeyo ka dib ……...3	
29	Goortaa baad saabuunta adeegsataa?	Gacan ku dhaqashada……..1 Jidh ku dhaqashada…….2 Dhar ku dhaqashada……3	
30	Daryeelka caafimaad iyo dhawritaanka Nadaafadeed ee dugsiga nu boratay xilliyaada wax-barashada ka baxsan side baad u fulisaa?	Adeega masquleed……...1 Aeegsiga dhaqida khudoorta……2 Cabid la`aan biyahaan karsanayu……3 Ka dhawrida tiqbiga cunada korkhsa……...4	
31	Ilkahaaga malin kasta ma: A.Nadiifisaa goor wal gaatilgaa B.Mar-mar ojirra mafeghi C.Mararka qaarkood fariok D.Ha ba yaraatee manadiifiyo E.Biyo oo qudha manibaad	Haa Maya Ma garanaayo 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3	
32	Ilkahaaga malin kasta ma: A.Nadiifisaa goor walook? B.Mar-mar ojirra yagaaha? C.Mararka qaarkood fariok? DHa ba yaraatee haahi manadiifiyo fagdaahaa? E.Biyo oo qudha manibaad?	Maya Haa 1 2 1 2 1 2 1 2 1 2	
	Gaffalka hyeejiinkaha		
33	Ilkahaaga side baad u nadiifisaa?	Haa ……1 Maya……..2	

34	Ilkahaaga gootee baad nadiifisan?	Haa ……1 Maya……..2 Ma garanaayo……3		
35	Jidhkaaga muddo intee ah baad ku dhaqataa?	Haa ……1 Maya……..2		
36	Waxa aan kaa waxaysano xaaladaha Dhaqamada qaarkood xillyada aad fashaan •Ilaalinta nadaafadda timha? •Bugo maydhitaanka? •Khaakhato aasid? •Wayaa baad ku dhaqataan?	Haa Maya 1 2 1 2 1 2		

Annex2.2: Checklist

HARAMAYA UNIVERSITY COLLEGE OF HEALTH AND MEDICAL SCIENCE

Check list prepared to assess the status of WASH in primary schools of Dire Dawa administration

Part A: General information

Region_____Kebele_____ Name of school_____Location:Urban _____Rural _____ School

Affiliation:public____private_____others _____

Total number of teachers_____ male _____ Female_____

Total number of toilets for teachers_____ For male_____ For female_____

Total number of student's _____ male _____ Female_____

Total number of toilets for students _____ For male _____ For female _____

Minimum distance between toilets and class room _____

Distance of water source from school (in walking minutes) _____

Number of water points for drinking water._____

Part B:Check list to assess the statu of WASH in primary schools

No.	Questions	Coding category	Skip to
1	Does the school have fence?	Yes. ……. ……..1 No..……..……2	
2	Area outside and inside of the school	Clean from solid and non-solid waste ……...1 solid and non-solid waste are present around school. ……2 stagnant water are found around school…….3	
3	Is the physical condition of school building good?	Yes …….. ……...1 No… ……...2	

	Water supply		
4	Does adequate drinking water(5l/c/d) andclean drinking water(with out odour, color or taste) available in the school (5 liter per student per day)	Yes……..……1 No……..... ……2 →	10
5	Functional water points for drinking water available at adistance≤10 walking minutes	Yes……..1 No……2	
6	Does all sources andcontainers of drinking waterare properly covered?	Yes …… ……1 No…….……...2	
7	Does the water sources child-safe? (not slippery, water well cover, convenient water,collection tools)	Yes ……..1 Some……2 No…….3	
8	Does the water drinking pointschild friendly? (Size of tap, heightof tap and kindof tap etc…)	Yes ……..1 Some ……...2 No ……...3	
9	How do child drink water?	With their own cup or bottle ……..1 With one single cup or bottle …….2 With their hands …….3 With their mouth…….4	

	Toilets/Latrines							
10	Types of functional toilet in the school	For students				For teachers			
		Boys		Girls		Male		Female	
		Yes	no	Yes	no	Yes	no	Yes	no
	1.Flush toilet with seat	1	2	1	2	1	2	1	2
	2.Flush toilet (squatting)	1	2	1	2	1	2	1	2
	3.urinals (male)	1	2	1	2	1	2	1	2
	4.simple latrine (cemented hole)	1	2	1	2	1	2	1	2
	5.simple latrine (not cemented hole)	1	2	1	2	1	2	1	2
	6.Bucket latrine	1	2	1	2	1	2	1	2
	7. No latrine/defecate in nature	1	2	1	2	1	2	1	2
	At least one **NO** in item 7 ↓	All **YES** in item7 →							25
11	Insects present in the latrines	Yes. ……..1 No ……. ……...2							
12	The size of toilet bowlare suitable	Yes …..……1 No ……. ……..2							

13	Are the toilets located near enough to the classes/building? (Not > 30m from class room)	Yes ……1 No ……..2	
14	Is anal cleansing material available ?	Yes ……..……..1 No .……...……..2	
15	Are toilets without too much smell?	Yes……..1 No……...……2	
16	Do all toilets have door?	Yes ……..……...1 No……...2 →	21
17	Number of toilets	with door_____ without door_____	
18	Door bolts are at height suitable for children?	Yes ……1 No…….…….....2	
19	Number of toilets having door with suitable and functional bolts	No. of toilets with child friendly bolts_____ No. of toilets with non- child friendly bolts_____ No. of toilets without bolt_____	
20	Are toilets/latrines floor clean?	Yes...…….……..1 No....…..…….....3	
21	How many toilets have poor drainage?	No. of toilet with poor drainage_____	
22	Are toilets walls clean?	Yes...……...1 No…..……2	
23	Are there cleaning materials &a disposal system for girls' menstruation?	Yes ……1 No… …….....3	
	Hand washing facilities		
24	Are there hand wasing facilities for students?	Yes ……1 No……...2	
25	Where is the hand washing facilities located?	Inside the toilet ……..1 Outside the toilet(≤10m) ……2 Far from toilet (>10m) ……...3 Not available……..4 →	36
26	Are there gender separate functional hand washing facilities?	Yes……..1 No …….....2	
27	Number of available hand washing facilities in school	Total number of hand washing facilities _____ Number for boys _____ Number for girls _____ Number for mixed _____ **If not available record "00"**	
28	Distance between toilets & hand washing facilities? **If located in the same room**	Distance in meters for boys _____ Distance in meters for girls _____ Distance in meters for mixed _____	

	record"00"		
29	What is the condition of these hand washing facilities? ➢ Tub with several taps ➢ Wash stand with taps ➢ Movable wash stands ➢ Pitcher & basin	Functioning Nonfunctioning Leaking 1 2 3 1 2 3 1 2 3 1 2 3	
30	Are therehand washing facilities especially for teachers?	Yes ……1 No ……2 →	32
31	Is water available in the hand washing facilities always?	Yes …… ……...1 No…… ……3	
32	What water source is used in the hand washing facilities?	Pipe …….....1 Water brought to a barrel.……..2 Others(specify)……...6	
33	At the hand washing facilities, are the following available: ➢ Bar soap? ➢ Liquid soap? ➢ Ash/Mud/Sand?	Yes in all of them yesin some of them None 1 2 3 1 2 3 1 2 3	
34	Is hand washing facilities easy to clean?	Yes ……1 No ……2	
	Cleaning And waste disposal		
35	How does the school dispose solid waste?	Collect on the floor(open dumping)……..1 In pit/burying…..……...2 By burning…….3 On municipal container…….4	
36	Is the school yard/play ground clean?	Yes……1 No…….....2	
37	Are waste bin available in all class rooms and around the school?	Yes ……1 No……..……..2	
	Hygiene education		
38	Does the school offer education on hygiene and sanitation for the student?	Yes.……1 No. ……..2	
39	How often?	Daily……1 Weekly……2 Monthly……...3 Do not know……4	

40	What teaching aids are used to promote hygiene activities in your school?	Books.....1 Models.....2 Posters/charts.....3 Video programmes.....4 Radio programmes.....5 Other……..6	
41	During your visit, did you observe any posters or educational materials for hygiene promotion?	Yes ……1 → 42 No ……..2	
42	What type and what subject?	Type _____ Subject_____	
43	Do school children participate actively in maintaining hygiene?	Yes ……...1 No……..2	
44	Who provide teaching about sanitation and hygiene?	Teachers……1 Health professionals……...2 peereducation ……3 Others…….....6	

Annex 3: Curriculum Vitae

1. Personal Information

Name: Mebratu Tadesse
Age: 48
Sex: Male
Date of birth: 15/2/1959 e.c.
Marital status: Divorced
Address: Dire Dawa
Mobile: 0910040562

2. Educational Back Ground

Education	**Name of school/university**	**Year attended**	**Award**
Secondary	Asebe Teferi	1976 to 1979	Certificate
Tertiary	AA Gondar Medical College	1980 to 1981	Diploma in ENH
	Alamaya University	1993 to 1996	" in Accounting
	Alamaya University	1997 to1999	Degree in Mgmt
	Alamaya University Harar FOH	1999 to 2003	Degree in ENH

3. W0rk Experience

Name of institutionyear of services

DDA Health bureau 24

4. Short-term and Long-term training

- Infection prevention
- Integrated development for water supply and sanitation
- Project management and proposal development
- EPI mid level manager training
- BPR and BSC training
- CLTS training
- e.t.c…

5. Hobbies

- Referring and Reading books,and journals of public Health, Medicine and social science
- Listening of BBC News
- Enjoying football games

6. Reference

NameplaceContact Address/Mobile

Amaha Girma Dire Dawa 0920698344