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Assess to Basic Sanitation Facilities and Associated factores in City Administerations of Amhara Region Community Based Cross - Sectional Study

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ASSESS TO BASIC SANITATION FACILITIES AND ASSOCIATED FACTORES IN CITY ADMINISTERATIONS OF AMHARA REGION COMMUNITY BASED CROSS - SECTIONAL STUDY

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ATHESIS SUMMITED TO DEPARTMENT OF ENVIRONMENTAL HEALTH, SCHOOL OF PHBLIC HEALTH, COLLEGE OF MEDICINE AND HEALTH SCIENCE IN THE PARTIAL FULFILMENT OF THE REQUIREMENT OF THE DEGREE OF MASTER IN WATER, SANITATION AND HYGIENE

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Thesis Submission Form

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ABBREVIATIONS AND ACRONYMS

CLTHS	Community Led Total Sanitation Hygiene
DALY	Disability Adjusted Life Years
EDHS	Ethiopian Demographic Health Survey
FTI	Faecally Transmitted Infections
FSM	Feacal Sludge Management
FGD	Focused Group Discussion
GDP	Gross Domestic Product
HEW	Health Extension Worker
UHEP	Urban Health Extension Professionals
HEP	Health Extension Program.
ISC	Improved Sanitation Coverage
JMP	Joint Monitoring Programme
MDG	Millennium Development Goal
NGO	Non-Governmental Organization
NTD	Neglected Tropical Diseases.
ODF	Open Defecation Free
SDG	Sustainable Development Goal
UNICEF	United Nation Children Fund
US$	United States Dollar
WHO	World Health Organization
WASH	Water Sanitation and Hygiene

ABSTRACT

Background: Globally Sustainable Development Goal adapted to achieve at least basic sanitation facilities but still in Sub Sharan Africa including Ethiopia has very low achievement. In urban setting of Ethiopia only a limited households have basic sanitation facilities and still its status is not clearly known. Therefore assessment of basic sanitation facilities and associated factors is acritical issue.

Objective: To assess basic sanitation facilities and associated factors in Bahir Dar, Gondar and Desse city administration Amhara region Ethiopia 2019.

Methodology: Community based cross - sectional study with both quantitative and qualitative method was conducted from March 2019 to January 2020. Multi stage sampling tequnique followed by systematic random sampling technique was carried out. The data was collected using structured questioner and observational check list and finally the data entered using EPI-data software version 3.1 and exported to SPSS version 20 for analysis. For qualitative study Focused group discussion and key informant interview was conducted with tape recording and minute book taking and analyze thematically to supplement the quantitative finding.

Result: A total of 1022 study subject included in this study with response rate of 100 %. The mean age of the households with standard deviation were 38(±14.5) years. Out of the total study subject 282(27.6 %) households with 95 % C I (24.6 – 30.3) had basic sanitation facilities and the rest 276(27 %) had limited sanitation facilities. Based on qualitative study the main reason for not to have basic sanitation facilities was lack of money, lack of space, rented households shared sanitation facilities and low awareness on the benefit of basic sanitation facilities. Based on Stastical analysis male headed households (AOR= 1.49, 95 % CI, 1.08, 2. 06), private house owner ship (AOR= 2.85, 95 %, CI, 1.63, 4.99) and high income family (AOR= 2.74, 95 % CI, 1.72, 3.40) were positively associated with access to basic sanitation facilities. But family size between 1 – 4 family member (AOR= 0.53, 95 % CI, 0.34, 0.82) and 5 – 8 family member (AOR = 0.38, 95 % CI, 0.25, 0.56) were less likely to had basic sanitation facilities.

Conclusion and Recommendation: the status of basic sanitation facilities in Bahir Dar, Gonder and Desse city administration were 27.6 % with 95 % C I (24.6 – 30.3). Therefore the Government and other responsible body should encourage urban community to have private house, increase household income level and encourage people to go to marriage and collaborated with the community to achieve basic sanitation facilities for all. .

1. INTRODUCTION

1.1 Background

In the densely populated settlements of developing countries on-site sanitation systems are usually the only feasible option because dwellers have no sewers system in place (1)Safe water, sanitation, and hygiene (WASH) are fundamental to an improved standard of living, including the protection of health and the environment, improved educational outcomes, greater convenience, dignity and gender equality(2). Improved WASH is a center to reduce poverty, promoting equality and supporting socioeconomic development(3). WASH intervention saved millions of children from premature death and illness related to malnutrition and preventable water-borne diseases such as diarrhea, better maternal health and care for newborns, adults in general living longer and healthier lives(4)

Poor access to sanitation facilities also the main cause of faecally-transmitted infections (FTIs) including cholera and diarrheal disease which remains the second leading cause of morbidity and mortality among children under the age of five and the leading cause of death in sub-Saharan Africa(5). Children are more likely to be undernourished and stunted if they are exposed to FTIs which are linked to poor WASH and open defecation(5). Poor sanitation is also associated with stunting and environmental enteropathy, resulting in increased risk of infectious disease, poorer cognitive development, lower educational outcomes at schools and lower productivity in adult life (6)

Economic benefits of WASH include an overall estimated gain of 1.5% of global gross domestic product (GDP) and return 4.3 united states dollar (US$ 4.3) for every dollar invested in water and sanitation activities and can reduced health care costs for individuals and society(7). Investments in WASH also have positive effects on health and contribute to improving other critical areas related to public health covered by the sustainable development goals(SDGs) such as nutrition, economic development, education, and climate resilience(8).

It is estimated that 72.4 million disability-adjusted life years (DALYs) were attributable to unsafe WASH practices (18.7 million DALYS due to inadequate sanitation)(9). Every year two hundred

sixty billon united states dollar (US$260 billion) has been lost as a result of poor WASH and it is estimated that for every one united states dollar (US$1) invested in water and sanitation, four united states dollar (US$4) are returned in increased productivity (10). Improving WASH not only reduces the burden on health systems but also decreases days lost at work or at school through reducing time spent collecting water, walking to open defecation sites, being ill and caring for sick relatives(11).

The negative impact of poor sanitation on human and environmental health also has been widely acknowledged and includes exposure to acute excreta-related illness such as diarrhea, cholera, dysentery, typhoid, and hepatitis A (12). In many countries of the world the number of children who died from diarrheal diseases strongly associated with poor WASH(13).Recent research revealed improving sanitation in developing countries play higher role in the reductions of mortality and morbidity(14). It is estimated that improving water supply, excreta disposal, and hygiene practices could prevent 361,000 deaths in under five children (15)

Access to basic sanitation facilities in urban Ethiopia including Amhara region has very low achievement, for such low achievement income of the households, educational status, attitude, ownership of the houses, gender of the hade of the house hold, house hold size, and the type of water source are some of the factors that affect improved sanitation facilities(16).

In Amhara region most sanitation facilities are poorly constructed super structure with no walls or roofs and are not easily accessible for all house hold member(17). Therefore Amhara region is one of the regions that have faced sanitation related challenge for many years. Despite huge investments over the last years in the water and sanitation sector in Amhara region millions of poor communities still remain without improved sanitation facilities (18).

1.2 Statement of the problem

Lack of access to safe water and sanitation systems the leading causes of child mortality and morbidity they also contribute to under nutrition, stunting, and act as barriers to education for girls and to economic opportunity for the poor(19). Inadequate WASH also associated with

substantially increased maternal mortality as well as the transmission of a range of neglected tropical diseases and respiratory infections(20). Lack of sanitation facilities contributes to 1.5 million child deaths from diarrhea each year. Chronic diarrhea can also hinder child development by impeding the absorption of essential nutrients that are critical to the development of the mind, body, and immune system. It can also impede the absorption of life-saving vaccines(21).

Similarly inadequate sanitation is estimated to cause 280,000 diarrheal deaths annually across the globe, about 2800 people die daily from illnesses related to inadequate sanitation, poor hygiene and unsafe water(22). The health burden associated with inadequate WASH falls disproportionately on young infants and children. Diarrheal diseases caused by inadequate WASH are one of the leading causes of death among under five children globally(23).

An estimated 842,000 global deaths in 2012 were due to diarrhea caused by poor WASH. Other less well-quantified but important long-term health consequences of poor WASH were helminths and enteric dysfunction (24). Lack of access to sanitation and poor hygiene together also responsible for about 88% of all deaths from diarrheal diseases in developing countries(25). poor sanitation facilities also attributed to 280,000 deaths from diarrhea every year and it hampers progress on the control of cholera, food safety, infant mortality, malnutrition, polio, typhoid, and Zika (26). But such health problem can be reduced by use of improved sanitation facilities (basic sanitation facilities)which can reduce one third of the global incidence of diarrheal disease a leading killer of children(27).

Globally 39 % of population used safely managed sanitation services whereas 68 % uses at least a basic sanitation facilities and the rest 61 % and 34 % still lack safely managed and basic sanitation facilities respectively (28). In Sub – Saharan Africa improved sanitation coverage has made slower progress and only 5% a point increase since 1990(29). In Ethiopia more than half of the population still used unimproved sanitation facilities where as in the urban slums of the country 88.6% of the

house hold used unimproved sanitation facilities indicating that the urban poor did not receive adequate sanitation facilities(30).

Similarly 1.2 billion people globally gained access to improved sanitation in urban setting however the population without improved sanitation has actually increased from 215 million to 756 million between 1990 to 2012 (31).In recent years much progress has been made to increasing access to WASH services but still too many people lack safe, sustainable water supply and sanitation facilities. In developing countries particularly those in urban areas people that used shared sanitation facility was 15 %. In sub-Saharan urban population that shared their sanitation facilities was a much larger 31%(32).

Access to WASH facilities in Ethiopia are among the lowest in Sub-Saharan Africa and 7 % of Ethiopian households had improved sanitation facilities (16% in urban areas and 4% in rural areas). In the urban condition 43 % had unimproved sanitation facility , 35 % had shared sanitation facilities and 7 % open field(33). In Addis Ababa 88 % of urban slum dwellers and 83% of urban residents of nationwide used unimproved sanitation facilities indicates that the urban poor have as low sanitation coverage as the rural populations(34). Additionally in Addis Ababa 75% of the households had pit latrine of which the majorities are shared with other households the rest 17 % had pour flush toilet (35).

Therefore in recent years Ethiopia has been progressively pushing forward on a number of trials to solve WASH activities but still there is challenge in overall country WASH achievement (36).Whereas through the introduction of Community Led Total Sanitation and Hygiene (CLTSH) in Ethiopia significant numbers of households have gained access to self-constructed basic latrines. However most of the self-constructed latrines fall (collapsed) with in a short period of time without fulfilling the minimum standard of improved sanitation facilities(37).In addition in the last 25 years improved latrine coverage is only 28%. The average annual improved latrine growth rate is sluggish (1.2% per year) with this pace it will take another 25 years to reach to 51% improved sanitation coverage unless a new thinking and effort is in- place(38).Therefore even though globally Sustainable Development Goal (SDG) adapted to access adequate and equitable sanitation for all and to achieve basic sanitation facilities but in Ethiopia only 7% of the population had basic sanitation facilities therefore assess to basic sanitation facilities and associated factors in city administration of Amhara region is acritical issue.

1.3 Significance of the study

The core objective of government urban health extension program (UHEP) is to increase awareness related to environmental health including basic sanitation and achieve all households in urban setting to have safe sanitation facilities. But still in urban situation there are large number of households used unimproved sanitation facilities, even those households that used improved latrine were shared with other households therefore knowing the status of basic sanitation facilities and associated factors in urban setting may help the urban community to improve their basic sanitation facilities in the future

Finally the finding of this study will help Regional Health Bureau, town health department and town health office to have information on planning, implementation, monitoring and evaluation of sanitation activities especially basic sanitation facilities.

The result also be used as base line information for those who have interest to do research in the area.

2. LITERATURE REVIEW

2.1 Status of basic sanitation facilities

Globally 2.3 billion people who still lacked a basic sanitation facilities or had unimproved facilities (856 million). The remaining(600 million) had limited sanitation facilities that are shared with other households(39). In addition, more than one third of the global population some 2.5 billion people do not had improved sanitation facility (40).

And based on Joint Monitoring Programme (JMP) 2017 report revealed that from Africa countries Ruanda , Gabon , Senegal , Niger and Eritrea had at least basic sanitation facilities 57 % , 42 % , 24 % , 24 % , 29 % respectively (39).

Whereas in Mozambique 38 % of urban dweller had basic access sanitation facilities and 71 % had access to a limited sanitation facilities (41). A study conducted in Nigeria indicated that 36 % of urban households had improved sanitation facility(42) Similarly study conducted in Gana 2019 only 12 % of urban households had improved toilet(43).

Another study conducted in Ghana showed that, 32% households had access to improved sanitary facilities(44). In urban Zambia sanitation coverage was relatively low with only 56% of the urban population had improved sanitation facility out of that 24% shared (45). Another study conducted in Dar Salaam Tanzania revealed that 56% of households had a facility that met improved sanitation technology (46).

A study conducted in Malawi and Uganda on fecal sludge management showed that 47 % , 74 % and 18 % of fecal sludge in Lusaka, Senegal and Uganda respectively discharge to the environment without any treatment(20)

In Ethiopia based on Joint Monitoring Programme(2017) between (2000 and 2015) basic sanitation facilities was only increased (slower progress) from 3 % to 7 % , limited sanitation facilities similarly increase from 4 % to 7 % (47).

Similarly according to JMP estimation 2017 in urban Ethiopia only 18 % of urban households used at least basic sanitation facilities whereas 7 % used limited (shared) sanitation facilities (39).

In 2014 based on JMP estimation in Ethiopia urban setting only 27 % of households used improved sanitation facility(40). whereas a study in Ethiopia Hawassa town 2016, indicated that 32 % 0f the households had basic sanitation facilities or improved sanitation excluding shared improved (48). Another study conducted in Addis Ababa showed that only 7 % of urban dweller had improved sanitation facility from which having pour-flush type of sanitation facility was 4 % (49).

Based on Ethiopia demographic health survey (EDHS) 2016, 16 % of urban households had improved sanitation facilities (50). Assessment of Water Supply and Sanitation in Amhara Region conducted by water aid and regional health Bureau in 2010 showed that the total sanitation coverage of the region was ranges from 30 % (least) to 100% (highest)(51).

2.2 factors associated with basic sanitation facilities

2.2.1 Socio demographic factors

A study conducted in Nigeria (2017) indicated that the type of household sanitation facility is significantly associated with the household size, gender of the head of the household, wealth status, water sources type, number of rooms and access to electricity(42).

Another study conducted in Ghana showed that, 32% households had access to improved sanitary facilities out of them 35 % were married households (44).

Whereas study conducted in Ethiopia, psychological variable including perceived severity, attitude and injunctive norm was positively and significantly associated with latrine ownership. whereas among the demographic factors**,** those with a family size of more than six, households with a child attending school, the head of household having high school education, a family member who took CLTSH were positively associated with the presence of sanitation facilities(52).

Another study conducted in Enderta town Ethiopia revealed that house hold educational status(primary education, secondary education , college and above) more likely to have sanitation facilities than illiterate one and households that lived in an area where health institution present were more likely to have sanitation facilities compared to those who lived in an area which health institutions were not found(53).

Similarly in Eastern Ethiopia chiro town revealed that primary or secondary education level of the households , lack of skill to construct, male house hold head and initiation to construct latrine were significantly associated with sanitation facilities (54).

Another study conducted in southern Ethiopia wodogenet town revealed that the presence of ≤5 children in the household and age of the head remain significant predictors of sanitation facilities (55).

A study conducted in Dabat district in Amhara region showed that health facilities available in the village and educational attainment of the head of the household were significantly associated with the presence of sanitation facilities (56) In Debretabor town Amhara region, household who attended any level of education were more likely to have sanitation facilities than those who do not attended. Similarly household who had their own house were more likely to have sanitation facilities than those who rent the house. The same household who had an income of 1201 or more Eth .Birr per month were more likely to have sanitation facilities than household less than 1200 Eth Birr per month (57).

In Awobel district East Gojjam zone Amhara region showed that households with primary or secondary school children were more likely to have sanitation facilities than households with no primary or secondary school children. Similarly households who construct their latrine following advice given by health professionals more likely to have sanitation facilities than those imposed by government officials (58).

2.2.2. Socio - economic factors

A study conducted in Indonesia showed that a family who had high income (wealth quintiles) showed positive and significant relationship with having improved sanitation facilities(59). In Africa access to sanitation facility was dramatically related with income groups. whereas availability of improved sanitation facilities and septic tanks more prone to high income family(60).

Similarly In sub – Saharan Africa, the richest family were more likely to use improved sanitation facilities than the poorest family (61).

A study conducted in different small town of Ethiopia revealed that access to improved sanitation facilities was highest among the richest urban families. In this group 70% of households had access to improved sanitation facilities. Access was lowest among poor families under the poverty line. Only 44% of households in this group had access to improved sanitation facilities. The poorest households were more likely to have unimproved sanitation facilities(62).

2.2.3 Environmental factors

In Indonesia household located in urban area is more likely to have improved sanitation facilities than those located in rural area. Such condition also true at the global level where rural improved sanitation coverage is half of urban improved sanitation coverage(63).

In Ghana around 40 % of improved sanitary facilities were located within their individual compounds (44). Some study in Amhara region indicated that additional work to dig a hole, the presence of runoff, the location of sanitation facilities were the main factor for the presence of sanitation facilities(51).

2.3 **Conceptual frame work**

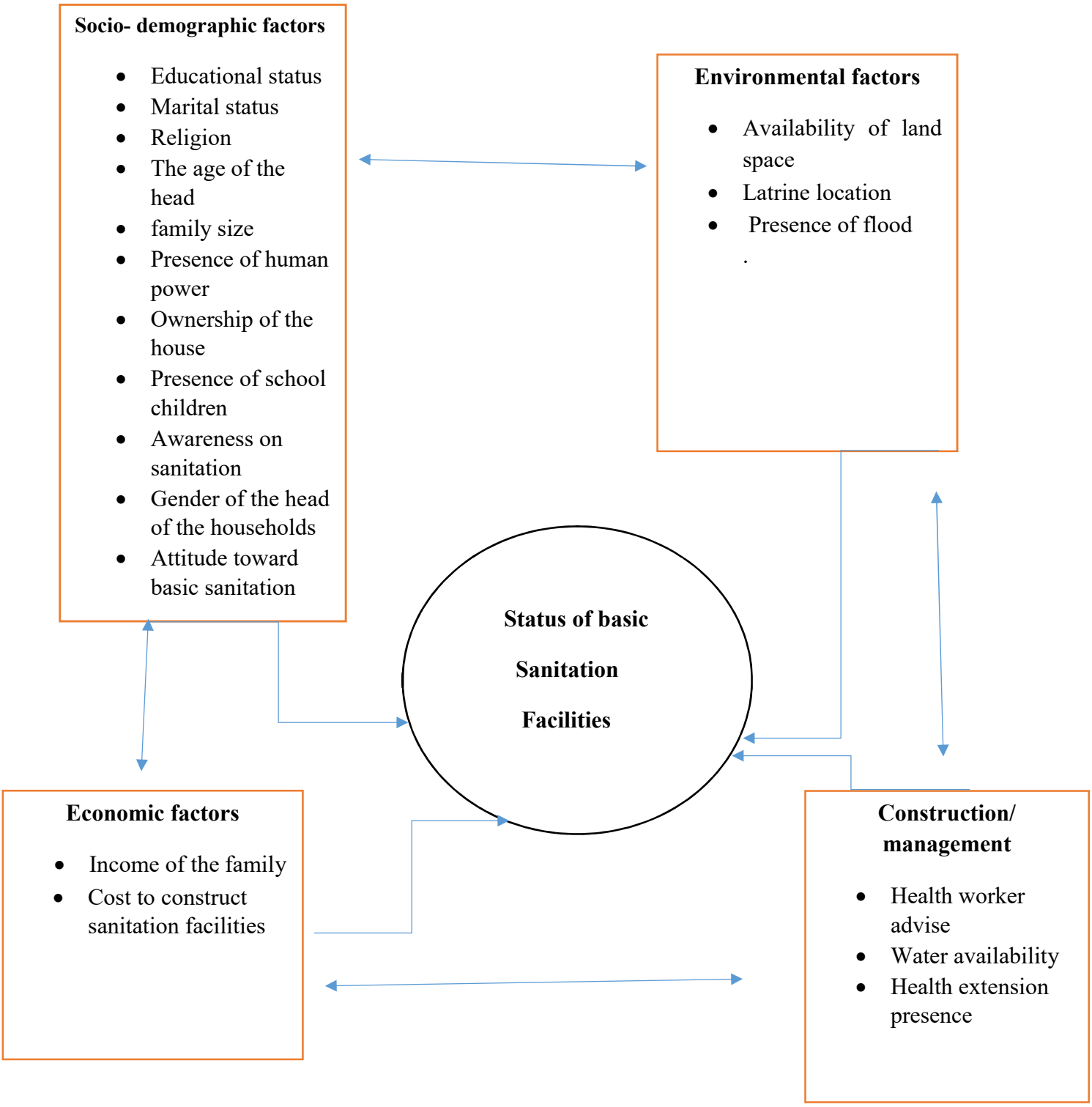

Figure 2.1: Conceptual frame work showing factors affecting basic Sanitation facilities adapted from different literature.

3. OBJECTIVE

3.1 General objective

- Assess to basic sanitation facilities and associated factors in Bahir Dar, Gonder and Desse city administration Amhara region 2019.

3.2 Specific objective

- To determine basic sanitation facilities in Bahir Dar, Gonder and Desse city administration Amhara region 2019.
- To identify factors associated with basic sanitation facilities in Bahir Dar, Gonder and Desse city administration Amhara region 2019.

4. METHODS AND MATERIALS

4.1 Study area

The study was conducted in the three city administration of Amhara region Bahir Dar, Desse and Gondor.

Bahir Dar town is the capital city of Amhara National Regional State and one of the tourist destinations in North West Ethiopia and located on the shores of Lake Tana, 1883 meters above sea level The Town was established during the Italian occupation in 1930s.

Based on central statics agency (CSA) the town has more than 314,000 inhabitants out of this male 155,430, female 158,570, total house hold size 73,023, under-five children 47,100 and women in reproductive age account about 75,360. The Town has 6 kefle ketema (sub city center), 26 urban kebele. Regarding health facilities distribution Bahir dar has three private Hospital, three Government Hospital, ten Health center, forty one medium clinics, five dental clinic, sixty seven pharmacy, fifty one drug store and one blood bank.

Gondar city which is located about 750 kilometers northwest from the national capital Addis Ababa and about 180 km from Bahir Dar city the regional capital of the Amhara. Gondar is one of the ancient and largely populated city of the country. Based on CSA the town has a population of about 338,746 inhabitants, out of this male 165,986, Female 172,760, number of under-five children 50,812, number of mother in the reproductive age 81,299 and the total households is 78,778 .The town has 6 kefle ketema (sub city center) and 22 urban kebele. The average annual temperature is 19.1 degree centigrade and an average annual precipitation is 1161 mill meter. It is situated in the foothills of Seimen Mountains at average elevation of 2300 meter sea level. Regarding health facilities distribution the town has one university teaching referral Hospital, one private general Hospital, eight Health center, eleven medium clinics, four dental clinics thirteen drug store and one blood bank. .

Desse town (the third study area) is one of the largest city administration of Amhara region which is located in 401 km far from Addis Ababa capital city of Ethiopia and 470 km away from Bahir Dar capital city of Amhara region. According to CSA, Desse has a total of 223,639 inhabitants out of this male 109,584, Female 114, 055, under-five children 33, 545, mother in the reproductive age 53, 67 and the total house hold accounts 52,009. The town has 5 kefle ketema (sub urban center) 18 urban

kebele and located in the center of Tossa higher mountain an average elevation of 2900 meter above sea-level. The town has two public general Hospital, three private general Hospital, eight Health center, forty medium clinics, six special clinic, five dental clinics, ten drug supplier, forty eight drug store and one blood bank.

4.2 Study design and periods

Community-based cross-sectional study with both quantitative and qualitative methods were conducted starting from October 2019 – November 2019.

4.3 Population

4.3.1 Target population

All households who lived in the three city administration of Amhara region (Gonder, Desse, and Bahir dar)

4.3.2 Study population

All households who lived in the selected 15 kebele of each studied city.

4.3.3 Study unit

All households who selected and included in the study based on systematic random sampling technique.

4.4 Inclusion and exclusion criteria

4.4.1. Inclusion criteria

Households who permanently live in the selected kebele and had sanitation facilities

4.4.2 Exclusion criteria

Households who couldn't give the required information because of unexpected accident in the household

4.5 Variable of the study

4.5.1 Dependent variable: Status of basic sanitation facilities (Yes/No)

4.5.2 Independent variable:

Socio- demographic factors

- Family income
- Educational status
- Marital status
- Religion
- The age of the head
- House hold size
- Presence of human power in the households
- Ownership of the house
- Presence of school children
- Awareness on sanitation
- Gender of the head of the household
- Attitude

Environmental factors

- Availability of land space
- Latrine location
- Presence of flood

Economic factors

- Family income
- Cost to construct sanitation facilities

Construction/ management

- Health worker advise
- Water availability
- Health extension presence

4.6 .Operational Definition

Improved sanitation facilities are those designed to hygienically separate excreta from human contact. These include wet sanitation technologies (flush and pour flush toilets connecting to sewers, septic tanks or pit latrines) and dry sanitation technologies (ventilated improved pit latrines; pit latrines with slabs; or composting toilets) (28).

Safely managed sanitation facilities : Availability of improved sanitation facilities that are not shared with other households and where excreta are safely disposed of in situ or transported and treated offsite**(28).**

Basic sanitation facilities: - Availability of improved sanitation facilities that are not shared with other households and the sanitation facilities located in the premises. (28).

Limited sanitation facilities: - Availability of improved sanitation facilities that are shared between two or more households(28).

Unimproved latrine: - Use of pit latrines without a slab or platform, hanging latrines or bucket

Latrines (28).

4.7 Sample size determination

4.7.1 Sample size determination for the first objective

The sample size for the first objective was determined by using single population proportion formula based on the following assumption; 95% confidence level and 5% margin of error to recruit study participants. 10% none respondent rate was considered. To calculate sample size, the study used Hawassa city basic sanitation facilities coverage 32 % (64).

Formula

$n = \frac{(Z\alpha/2)^2 P(1-P)}{d^2}$ Where;

p = Basic sanitation facility status (32 %)(64)

d = marginal error between the samples and population (0.05)

$Z\alpha/2$ = critical value at 95% certainty (+ 1.96 or -1.96)

n = calculated sample size = 354

When we use design effect = 2 the sample become 668

Finally 10% none respondent rate is added to the final sample size is n= 735

$=\frac{1.96*1.96(0.32(1-0.32)\quad)}{(0.05)2}$ = 334*2(design effect) = 668 +10 %(69) non response rate=735

Therefore the total sample size determined by based on single population proportion formula = **735.**

4.7.2 Sample size determination for the second objective

Variables	Confidence level (%)	Power	Ratio (unexposed /expose)	% of outcome in un exposed	Risk ratio	AOR	% of outcome in exposed group	Sample size	Sample size * DE	Reference
Informed by health HEW	95	80	1	58	1.3	2.2	75	266	532	(53)
Educational status	95	80	1	79	1.1	2.6	91	511	**1022**	(57)
Private household	95	80	1	76	1.2	8.4	96	155	310	(57)

Therefore, the total sample size determined based on factors are 1022, it is greater than sample size determined by the first objective, so that for the purpose of this study **1022** sample size has been taken to answer the research question.

4.7.3 Sampling procedure

Multistage sampling technique was carried out starting from Amhara region to reach to the three city administration town (Bahir dar, Gonder and Desse). Then in each city five kebele were taken based on simple random sampling technique. For each Town equal number of sample size was allocated i.e. for Gonder 340, for Desse 341 and for Bahir dar the same 341.

For each selected kebeles the sample size was allocated based on population proportion of the kebele, then at grass root (kebele) level to get the study subject or the study households a systematic random sampling tequnique were carried out.

For qualitative study a total of four FGDs were carried out. The participant for each city were female who had an age more than 18 years, live in the kebele for at least two years and had good communication skill were participated in the FGDs.

For key informant interview around six different professionals (experts) were interviewed in each city about different factors that related with basic sanitation facilities.

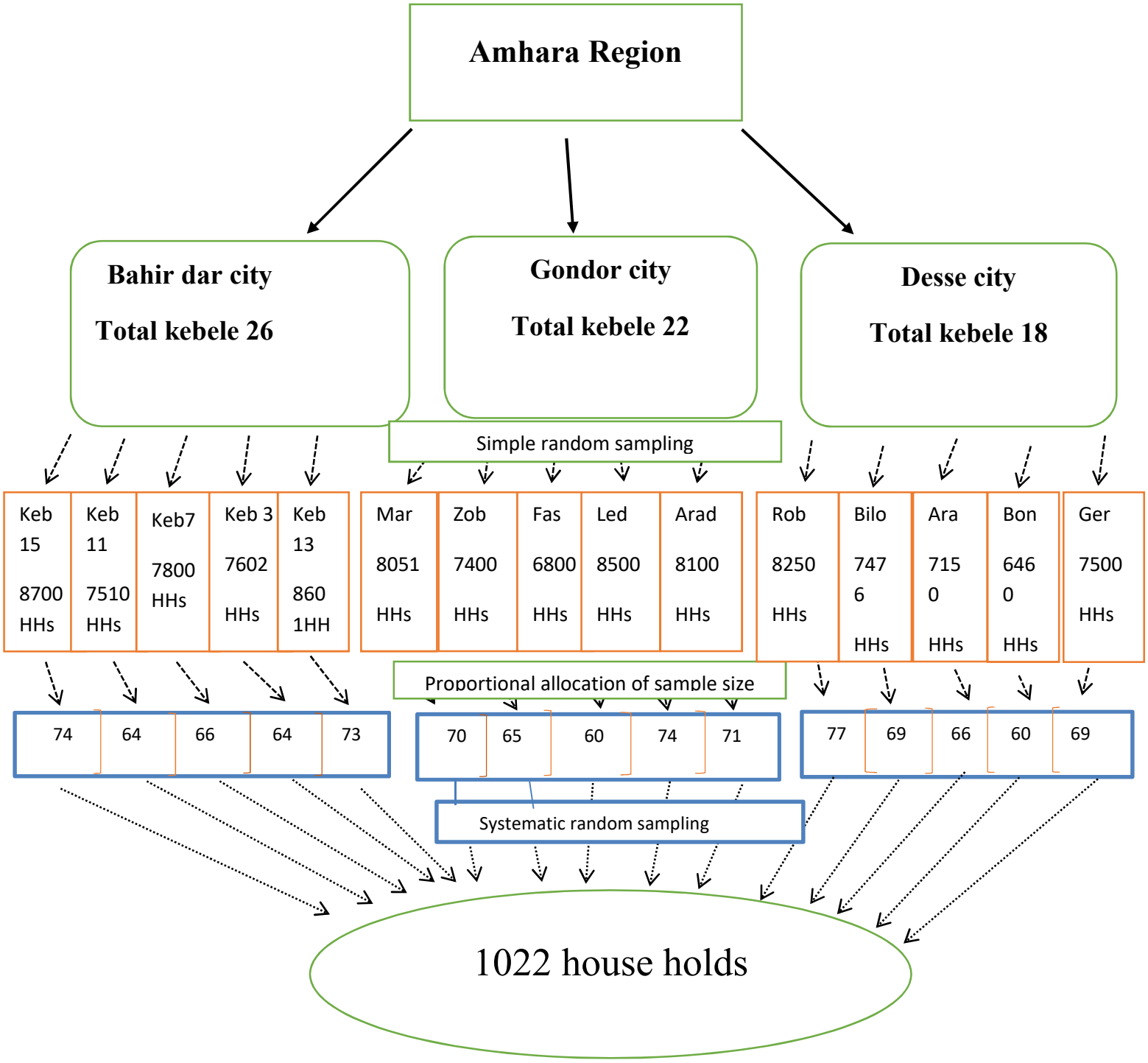

Figure 1: Sampling procedure to select study subjects Gonder, Desse and Bahir Dar city administration Amhara Region 2019.

4.8 Data collection tools and procedures

The data was collected by using structured questioner and observational checklist adapted from WHO/UNICEF joint monitoring program for WASH management and monitoring assessment tool(65). Data collectors and supervisors trained for two days about the objective of the study, the way how to fill questioner and the ethical issue of the study. Pretest was applied in each training to see the questioner consistency and the way how to fill the questioner.

Data collection tool were pretested 5 % out of total sample 51 households in Bahir dar town kebele 16 similar kebele where the actual data collection was not conducted. After pre-tested necessary modifications was made according to the inputs obtained from the pretest study.

For qualitative study (focused group dissection and key informant interview) in order to answer the research question different questions were adapted from different literature that focused on factors that affect basic sanitation facility availability.

4.9 Data quality assurance

In each city urban health extension professionals who had diploma nurse and BSC environmental health professionals who speak Amharic were recruited for data collector and supervisor respectively. Data collectors and supervisors were trained for two days about the objective, the way how to fill questioner and the ethical issue of the study. Pilot interview was applied in each training to see the questioner consistency and data collector test.

Close supervision was carried out during data collection. Every completed questionnaire was cross-checked daily by the supervisors and the principal investigator. Problems faced during data collection was discussed with data collectors and the supervisors and solved.

In qualitative part of the study the data were cross checked by principal investigator. During FGDs participant were encouraged to speak loudly and to generate the real practice in the issue, tape recording and minute book taking was carried out by urban health extension professionals.

Key in formant interview were conducted for each experts and recorded by tape, for each questioner regenerating related ideas to address the issue were carried out. For each recording the tape (recorder) were cross checked weather it is functional or not.

4.10 Data management and analysis

Epi data software was used for data entry and the data export to SPSS version 20 for further cleaning and statistical analysis. Descriptive statistics including tables and charts were used to display the result. To identify factors associated with basic sanitation facilities multivariable logistic regressions was carried out. Variables having p value <0.25 in the bivariate analyses were entered into multivariable logistic regression model. Crude and Adjusted odds ratios with 95% confidence intervals were calculated for each of independent variables to measure the strength of the association between outcome and independent variables. A p-value < 0.05 were considered as level of significance.

For qualitative part the data were managed and analyzed manually. Tape recording and minute book were taken for FGDs and key informant interview in each cities .Then after each recorded tape and minute book were listed and read each part and written in Amharic word by word and after translated to English language based on their coherence and analyze thematically so as to supplement the quantitative finding

4.11 Ethical consideration

Written ethical clearances were obtained from Bahir Dar University College of Medicine and Health Science School of public health and written official letters also obtained from Amhara region public health institution. Then a formal letter was send to Bahir dar, Desse and Gondor town health department and formal permission was obtained.

Each study participants were asked to give verbal consent before main interview was applied and trust with households that the information collected from respondents is kept confidential and it is used for the purpose of this study only. Privacy of respondents were kept during the interview.

5. RESULT

5.1 Socio demographic and economic characteristics of the study subjects

A total of 1022 study subject included in this study with response rate of 100 %.

From the total study subject 697(68 %) were male and 325 (31.8 %) female. Majority of the study participant 900 (88 %) were literate. Concerning house ownership around half 572(56.2 %) were live in their own house. Regarding marital status 636(62.2 %) were married and 127 (12.4 %) separated. More than half of the study participant 596(58.2 %) were orthodox Christian by religion and 393 (38.5 %) were merchant in occupation. About 386 (38 %) of study subject categorized as high income level and 282 (27.6 %) were medium income level. (Table 1)

The mean age of the household with standard deviation were 38(±14.5) years and the mean family size was 6 people per households. (Table 1)

Table 1: Distribution of respondents by Socio economic and demographic variable in Gonder, Desse and Bahir Dar city administration November 2019 **(n= 1022**)

Characteristics	frequency (No)	present (%)
Sex of respondent		
Male	697	68.2
Female	325	31.8
Family size		
1– 4	295	28.9
5– 8	587	57.4
>9	140	13.7
Age of respondent		
20 – 24	121	11.8
25 – 29	140	13.7
30 – 34	160	15.6
35 – 39	150	14.6
40 – 44	194	19
45 – 49	124	12
50 +	133	13
Educational status		
Literate	900	88.1
Illiterate	122	11.9
House owner ship		
Private	572	56
Rented from private	325	31.8
Rented from private	125	12.2
Marital status		
Married	636	62.2
Separated	127	12.4
Divorce	113	11.1
Single	93	9.1
Widowed	54	5.2
Occupation		
Merchant	393	38.5
Government employee	281	27.5
House wife / house work	159	15.6
Daily laborer	92	9
NGO/private work	97	9.5
Religion		
Orthodox	596	58.2
Muslim	325	31.9
Other	101	9.9

Income quintile		
high income level	386	38
Medium income level	282	27.6
Low income level	354	34.6
≤ 5 children presence		
Yes	324	32
No	698	68
Presence of school children		
Yes	350	65.7
No	672	34.2
Presence of health extension in the kebele		
Yes	1002	98
No	20	2
Health worker advice on basic sanitation		
Yes	431	42
No	591	58

5.2 Assess to basic sanitation facilities

Out of the total 1022 households 340, 341 and 341 were from Gonder, Bahir dar and Desse city administration respectively

In all cities out of the total study subject 282(27.6 %) households with 95 % C I (24.6 – 30.3) had basic sanitation facilities and 276(27 %) households had limited sanitation facilities. Whereas the rest 185(18 %) and 279(27.3) households had private unimproved and shared unimproved sanitation facilities respectively.

From total basic sanitation facilities 95 (9.2 %) present in Gonder, 115 (11.2 %) in Desse and 72 (7 %) in Bahir city administration whereas from limited (shared) sanitation facilities 93 (9 %), 73 (7 %) and 110 (10.7 %) available in Gonder, Desse and Bahir Dar city administration respectively. (Table 2)

The reason not to have basic sanitation facilities were 334(32.6 %) households responded high construction cost, 222(21.7 %) high operational cost, 134(13 %) absence of human power, 145(14 %), absence of land space and 97(9.5 %) absence of water in the compound whereas about 949(92.8 %) and 73(7.2 %) household sanitation facilities located in the house hold compound and dwelling room respectively.

This finding is supported by qualitative study the main reason not to have basic sanitation facilities were low income level of the household and absence of land space for the construction of basic sanitation facilities" *the reason not to have basic sanitation facilities was low income level of the households and the absence land space for the construction of basic sanitation facilities." (Most FGD participant"*

Table 2: Assess to basic sanitation facilities in Gonder, Desse and Bahir Dar city administration November 2019 **(n=1022).**

Characteristics	Gonder (n=340) Frequency	(%)	Desse (n=341) frequency	(%)	Bahir dar (n=341) frequency	(%)
Basic sanitation facilities (n=1022)						
Yes	95	9.2	115	11.2	72	7
No	245	24	226	22	269	26.3
Limited sanitation facilities (n=1022)						
Yes	93	9	73	7	110	10.7
No	152	14.9	153	15	159	15.5
Private unimproved sanitation facilities (1022)						
Yes	62	6	72	7	51	5
No	278	27.2	269	26.3	290	28.3
Shared unimproved sanitation facilities(1022)						
Yes	88	8.6	81	7.9	110	10.8
No	252	24.6	260	25.4	231	22.6
Location sanitation facilities (n=282)						
In own yard	325	32	326	32	319	31
In own dwelling	17	1.6	14	1.3	22	2
Sanitation facilities by type(n=282)						
Pour flush latrine	70	24.8	71	25	53	18.8
Pit latrine with slab	22	7.8	39	13.8	1 6	5.6
VIP(ventilated improved pit latrine)	3	1	5	1.7	3	1
Presence of flood (n=1022)						
Yes	125	12.2	95	9.2	101	9.9
No	215	21	246	24	240	23.4

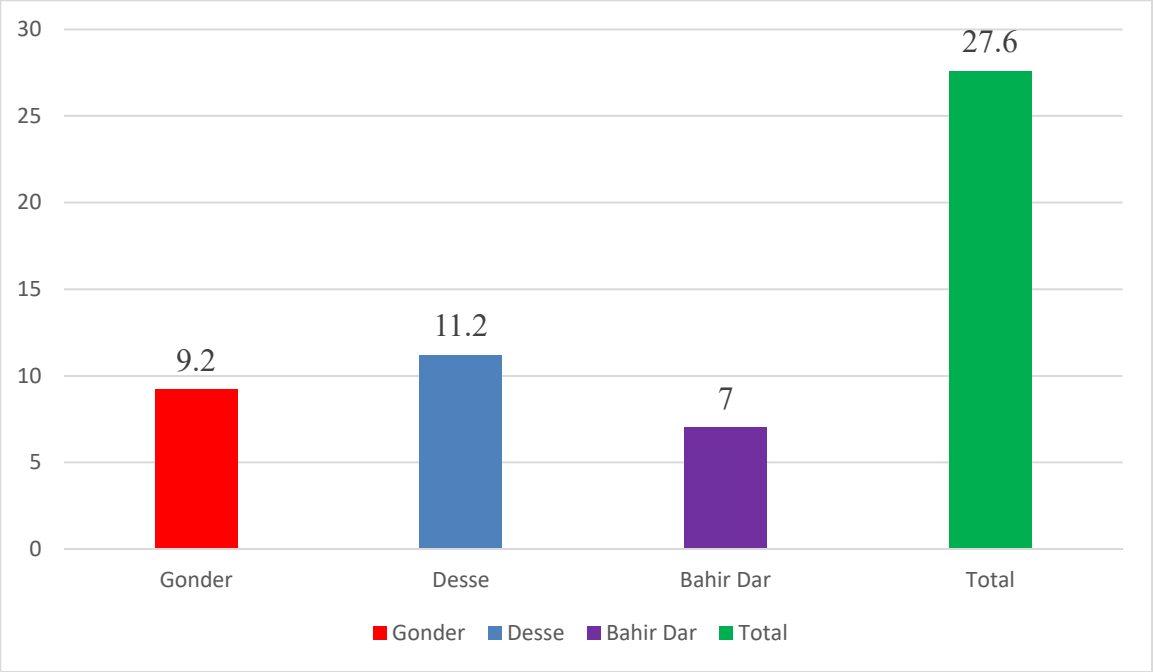

Figure3: Proportion of basic sanitation facilities in Gonder, Desse and Bahir Dar city administration Amhara Region 2019.

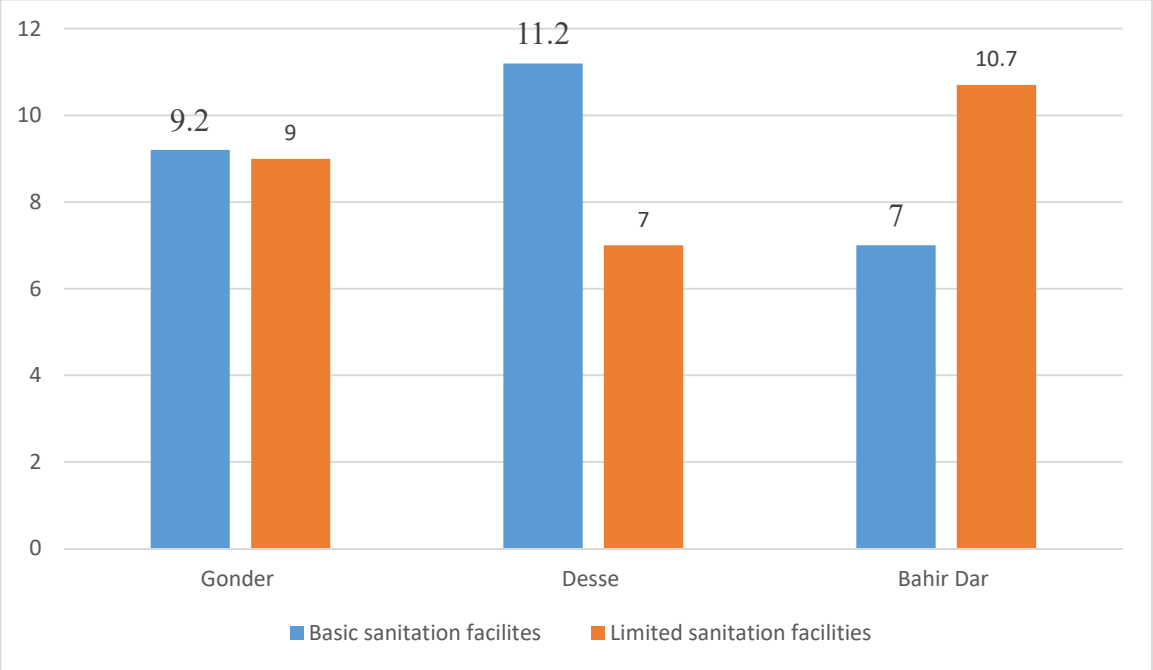

Figure 4: Proportion of basic Vs limited sanitation facilities in Gonder, Desse and Bahir Dar city administration Amhara Region 2019.

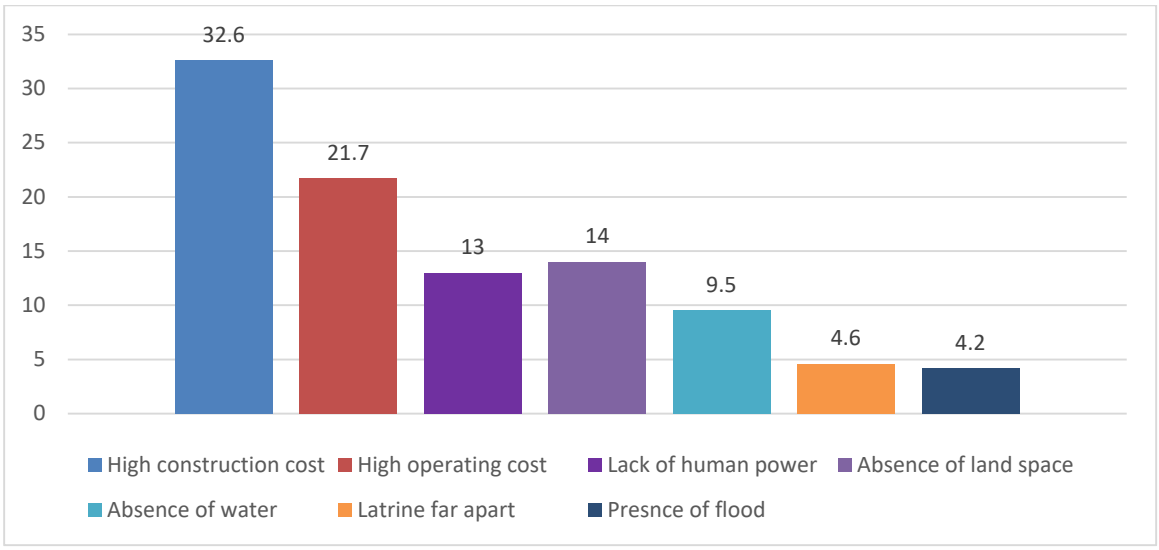

Figure 5: Proportion of the reason not to have basic sanitation facilities in Gonder, Desse, Bahir Dar city administration 2019.

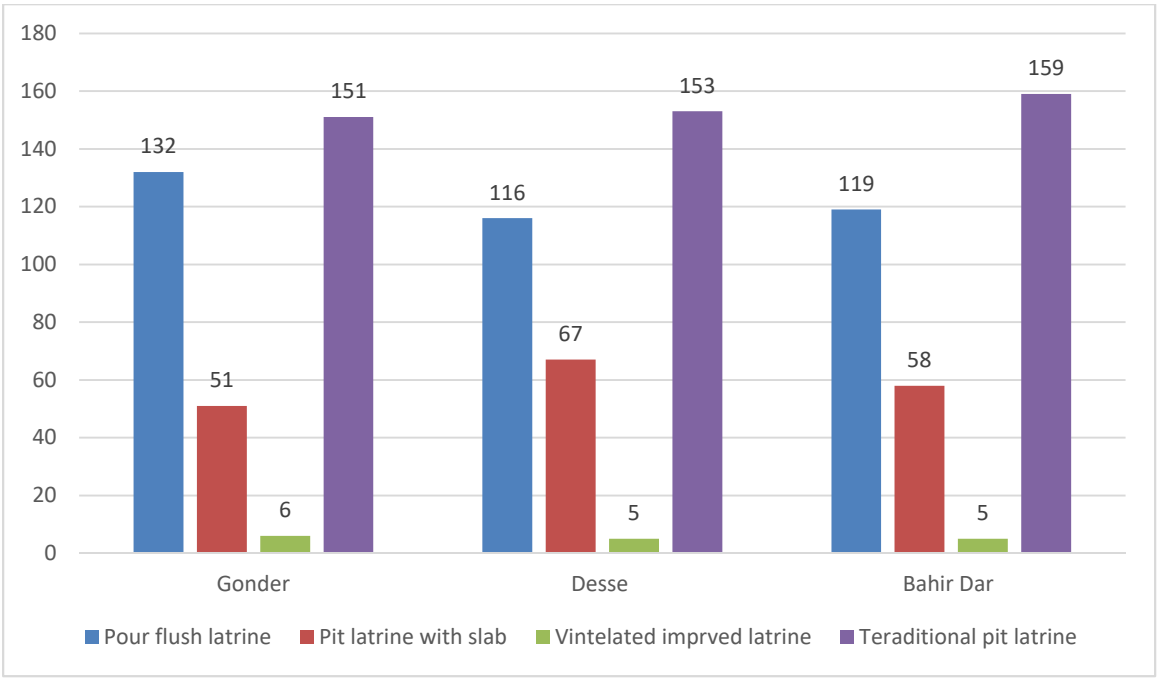

Figure 6: Types of sanitation facilities in Gonder, Desse and Bahir Dar city administration Amhara Region 2019

5.3 Knowledge related to basic sanitation facilities

Knowledge of participant on basic sanitation were, about 364(35.6 %) households responds basic sanitation keep our health 328(32 %) comfortable to use 130(12.7 %) keep our dignity and 119(11.6 %) households responds keep our privacy. Whereas knowledge related with limited (sharing) sanitation facilities were about 347(24.2 %) households responds limited sanitation facilities mostly it will not clean, 242(36.6 %) not comfortable to use, 222(21.7 %) increase health risk, 141(13.8 %) no privacy and about 109(10.7 %) households respond no health risk at all. (Table 3)

Table 3: Knowledge related to basic sanitation facilities Gander, Desse, Bahir dar city administration Amhara Region November 2019 **(n=1022)**

Characteristics	Frequency (No)	Present (%)
Knowledge on basic sanitation (n=1022)		
keep our health	364	35.6
comfortable to use	328	32.1
keep dignity	130	12.7
keep our privacy	119	11.6
I don't know	81	7.9
Knowledge on limited sanitation facilities (n=1022)		
It will not clean	347	24.2
Not comfortable to use	242	26.6
Increase health risk	222	21.7
No privacy	141	13.8
No health risk	109	10.7
I don't know	31	3
Initiation to have basic sanitation (n=1022)		
Self-initiation	735	71.9
We know the benefit	230	22.5
By seeing neighborhood	30	2.9
Health worker advice	16	1.6
Government support	3	0.3
Scholl children	8	0.8
Knowledge on unimproved sanitation(n=1022)		
Bad smell	46	33.9
Attract fly	329	32.2
Over flow of fecal matter	278	27.2
Cost to repair	47	4.6
I don't know	22	2.2

5.4 Attitude toward basic sanitation facilities

Attitude for prioritizing basic sanitation facilities over other activities or items like attitude on construction of basic sanitation facilities than buying other equipment, attitude on basic sanitation facilities , attitude on sharing sanitation facilities and attitude on environmental factors to had basic sanitation facilities were assessed and computed and those who had good attitude on basic sanitation facilities were accounts 645 (63 %) and the rest 377 (37 %) households had low attitude towards basic sanitation facilities .

5.5 Basic sanitation facilities with fecal sludge management system

Regarding to fecal sludge management system 865 (84.6 %) households emptied their sanitation facilities, out of these 381 (37 %) households removed fecal sludge using a truck, 364 (35 %) households disposed their fecal sludge in open ground , 109 (10.7 %) households disposed in nearby water body and the rest 22(2.2 %) disposed in treatment plant.

This finding was supported by qualitative study (FGD), most fecal sludge emptied from urban community disposed in to open land or water body around the city.

"The emptied fecal sludge from the town urban dweller disposed in to water body and open ground around the town" (most participants)

Table 4: Basic sanitation facilities with fecal sludge management system in Gonder, Desse and Bahir Dar city administration November 2019(n=1022)

Characteristics	Number (No)	Present (%)
Empting of latrine (n=1022)		
Yes	865	84.6
No	157	15.4
Where excreta disposed (n=1022)		
Removed using a truck	381	37.3
Open ground	364	35.6
Water body	109	10.7
Treatment plant	22	2.2
Leakage on sanitation facility(n=1022)		
Never leakage	901	88.6
Sometimes	97	9.5
Frequently	24	2.3
Reason not to empting latrine(n=161)		
Higher emptying cost	75	7.3
No service provider	48	4.7
Other specify	44	4.3

5.6 Factors associated with basic sanitation facilities

During the bivariate analysis income level, house ownership, family size and sex of the households were variable that have significant associated with the basic sanitation facilities at significant level of $p < 0.25$.

All variable that show significant association during the bivariate analysis were entered in to multivariable analysis income level, house owner ship, family size and sex of the households shows a significance association at p – value < 0.05.

Therefore the odd of male headed households was 1.5 times higher to have basic sanitation facilities than the odd of female headed households (AOR: 1.491 95 % CI, 1.079, 2. 059).

whereas the odd of the households with a family size of 1 – 4 were 47 % times lower to have basic sanitation facilities than the odd of households that have a family size of > 9(nine)(AOR= 0.528 95 % C I 0.341, 0.818). Similarly the odd of the households with family size of 5 – 8 were 62 % times lower to have basic sanitation facilities than the odd of the households with a family size >9 (nine) (AOR= 0.377 95 % CI, 0.252, 0.564),

The odd of the households who had high income level was 2.7 times higher to have basic sanitation facilities than the odd of the household who had low income level (AOR= 2.735, 95 % CI= 1.917, 3.902) similarly the odd of the households who had medium income level was 1.7 times higher to have basic sanitation facilities than the odd of the households who had low income level (AOR= 1.756 95 %CI, 1.194, 2.504).

Similarly the odd of the households who were live in their own house was 2.8 times higher to have basic sanitation facilities than the odd of the households who were rented either from kebele or private (AOR= 2.851, 95 % CI=1.629, 4.990).

Table 5: Factors associated with the status of basic sanitation facilities in Bahir Dar, Gonder and Desse city administration Amhara Region November 2019 (n=1022).

Characteristics	Status of Basic Sanitation Facilities		Crude OR (95 % C I)	Adjusted OR (95 % C I)	P - value
	Yes	No			
Sex of the respondent					
Male	206	491	1.375 (1.014 – 1.863)	**1.491 (1.079 – 2. 059)**	**0.015**
Female	76	249	1	1	
Family size					
1 – 4	83	212	0.522 (0.343 – 0.795)	**0.528 (0.341 – 0.818)**	**0.004**
5 – 8	139	448	0.414 (0.281 – 0.608)	**0.377(0.252 – 0.564)**	**0.000**
>9	60	80	1	1	
Ownership of the house					
Private	186	386	3.061 (1.783 - 5.256)	**2.851(1.629 – 4.990)**	**0.000**
Rented from private	79	246	**2.040 (1.153 – 3.610)**	1.767 (0.980 – 3.187)	0.060
Rented from kebele	17	108	1		
Wealth status					
Rich	137	249	2.893 (1.772 – 3.509)	**2.735 (1.717 – 3.402)**	**0.000**
Medium	81	201	1.826 (1.256 – 2.654)	**1.756 (1.194 – 2.504)**	**0.004**
Poor	64	290	1	1	
Marital status					
Married	199	434	1.401 (0.733 – 2. 678)	1.405 (0.710 – 2. 778)	0.327
Single	23	70	0.870 (0.410 – 1,848)	1.011 (0.458 -2.228)	0.976
Divorced	19	94	0.622(0.280 – 1.379)	0.748(0.325 – 1.722)	0.493
Separated	28	99	1.011(0.462 – 2.213)	1.091(0.478 – 2.488)	0.989
Widowed	13	40	1		
House hold occupation					
Merchant	119	274	0.970(0.599 – 1.570)	1.072(0.641 – 1.792)	0.789
Government employee	78	203	0. 858(0.519 – 1.420)	0.845(0.496 – 1.438)	0.534

House wife	34	125	0.607(0.342 – 1.078)	0.659(0.357 – 1.217)	0.182
Daily laborer	21	71	0.661(0.345 – 1.265)	1.001(0.491 -2.040)	0.998
NGO/private	30	67	1		
Religion					
Orthodox	160	436	0.869(0.546 – 1.381)	0.642 (0.385 – 1.072)	0.091
Muslim	92	233	0.934(0.572 – 1.526)	0.833 (0.490 – 1.416)	0.500
Other	30	71	1		

5.9 Result for qualitative study

5.9.1 Summery result of key informant interview

Theme 1 Reason not to had basic sanitation facilities

The main reason not to have basic sanitation facilities were low income level of the households, lack of space to construct basic sanitation facilities, low awareness on the benefit of basic sanitation facilities and rented households together with main household shared their sanitation facilities.

Theme 2 Reason for sharing of sanitation facilities

The main reason for sharing of sanitation facilities were lack of space, lack of money and rented households shared their sanitation facilities together with their neighbor.

As mentioned by Goner town health office hygiene expert" *reason for not to have basic sanitation facilities was low income level of the households and for rented households both the owner and rented dweller shared their latrine together and low awareness on the benefit of basic sanitation facilities*

In Desse town as mentioned by health extension supervisors "*there are households that have basic sanitation facilities in the town but most of them are shared their sanitation facility with other households. There are also households that shared there latrine specially poor urban dweller that unable to construct pit latrine for themselves because of low income level and lack of space and there are also several households that used traditional pit latrine in the town this might be due to low income level of the households, low awareness on benefit of improved pit latrine and lack of space to construct pit latrine*"

Theme 3 In appropriate fecal sludge management

In all city almost all of the households emptied their sanitation facilities but the emptied fecal sludge disposed in open ground or water body near a city without any treatment (town water and sewerage office expert)

In Desse town as mentioned by water and sewerage expert "*Before a year Desse town liquid waste emptied from urban dweller by government emptier vehicle and transported to "erobe hager" treatment plant for treatment and safe disposal but after some year usage drying bed and oxidation bed of treatment plant becoming out of function because of inappropriate usage of treatment plant. After this our office has been stopped service providing for about 4 months to the community. Thun after our office has been starting service providing and the emptied liquid waste transported, treated*

and disposed in treatment plant located in kombolcha town but this services cannot reached all residence of the town so there are some households emptied their latrine by private emptier and disposed their fecal sludge open ground near the town."

In Gonder town water and sewerage expert said ". *Most urban dweller emptied their latrine by government and private emptier, after we emptied household latrine fecal sludge transported and disposed in to filtration pond that used as treatment plant, so the liquid filtrated and settled the lower part of the pond, then disposed to nearby river, as we see around the river only little informal settled population alive, there is no any health risk observed that caused by liquid waste. Whereas the reaming solid part collected and buried in the pit. He also said there are some private institution that disposed there liquid waste to the community especially private hotel and restaurant*. "

In Bahir dar town water and sewerage expert said that " *in our town there are government and private emptier that are giving services for latrine emptying , after the fecal sludge emptied , it transported and disposed in open land or farm land around the town without any treatment. He also said there are some households that overflow their fecal sludge to the community. Even there are large private hotels in the town remove their liquid waste to the Lake Tana*"

Theme 4 Some trial on fecal sludge management

In Desse city there was a treatment plant for safe disposal fecal sludge but after some years usage its oxidation pond and drying bed became out of function because of in appropriate usage. Similarly in Gonder town fecal sludge transported and disposed in to filtration pond that used as treatment plant, so the liquid filtrated and settled the lower part of the pond, then disposed to nearby river. Whereas the reaming solid part collected and buried in the pit. (Town water and sewerage office expert)

Theme 5 problem in SDG wash activities

Regarding to implementation on Sustainable development goal (SDG) for WASH activities and basic sanitation facilities the town urban health extension professionals and others still they don't know about it. (Urban health extension supervisor)

Desse town urban health extension supervisor said "*Regarding awareness and implementation in sustainable development goal in WASH that is basic sanitation facility accessibility in the town we don't know it, but we do to have model kebele, to have all households pit latrine."*

Desse town hygiene officer said "*regarding to sustainable development goal in sanitation we know it and our office try to have urban dweller safe improved latrine especially in the three model kebele then we will expand it to the whole community*."

5.9.2 Main finding of focused group dissection

Theme 1 Reason for not to have basic sanitation facilities

The reason not to have basic sanitation facilities were low income level of the households, lack of space, and low awareness on the benefit of basic sanitation. (By most participants).

Theme 2 Reason for sharing of sanitation facilities

The reason of sharing sanitation facility was similarly low income level of the households, lack of space, live in slum area and households that rented their home they used the latrine together. (By most of participants)

The reason not to had basic sanitation facilities was low income level of the households, lack of space and low awareness on the benefit of basic sanitation (by most participants).

The reason of sharing sanitation facility was similarly low income level of the households, lack of space and households that rented their home they used the latrine together. (By most of participants)

Theme 3 In appropriate disposal of fecal sludge

Most of urban dweller emptied their latrine and transported and disposed liquid matter out of a town, in open land and near a river. There are also some households that are not emptied their sanitation facilities (most participant)

Most of urban dweller emptied their latrine and transported and disposed liquid matter out of a town, near a river (40 years old woman in Desse town)

Reason for not emptying the latrine was due to economic problem and lack of government support (25 years girl)

6. DISCUSSION

Safe water, sanitation, hygiene together with basic sanitation facilities are a fundamental to improve standard of life, protection of health and the environment. But still access to basic sanitation facilities in Ethiopia is acritical issue.

The finding of this study showed that 27.6 % with 95 % C I (24.6 – 30.3) households had basic sanitation facilities. This result almost in line with study conducted in Senegal and WHO/UNICEF JMP 2014 estimation for urban setting of Ethiopia (40, 66).

The figure greater than WHO/UNICEF JMP 2017 estimation for urban setting of Ethiopia(39). Such variation might be difference in socio demographic characteristics of a county, country economic development, difference in the way to implement, monitoring and evaluation of basic sanitation activities and even difference in study population, study design and operational definition.

It is also smaller than Hawassa, Gabon, Ruanda and Mozambique which had at least basic sanitation facilities in the country (39, 41, 48).The discrepancy might be in this study little intervention on basic sanitation activities, especially at grass root level un able to coordinate basic sanitation activities with the current urban health extension program. The present urban health extension program focused on only in improved sanitation facilities that lack activities related with private sanitation facilities that are not shared with other households in order to have healthy urban community.

Another reason might be the new SDG goal basic sanitation measurement for wash a new goal for higher officials specially decision makers so such situation may affect planning on basic sanitation activities starting from higher level of the country to the grass root level then it brings barrier to implement and evaluate basic sanitation activities at all level.

Even ministry of health mostly focused on others health services like mother to child health and communicable disease activities, sanitation related activities given by little attention or they lightly evaluated and jump to another activities so such condition can brings very low achievement on basic sanitation facility status.

Qualitative part of this study revealed urban health extension professionals they don’t know about basic sanitation the new SDG goal that shows how much basic sanitation forgotten by the main implementer that is urban health extension professionals and supervisors. Urban health extension

supervisors said "*Regarding awareness and implementation in sustainable development goal in WASH and basic sanitation facilities we don't know it, but we do to have model kebele"*

The result of this study also indicated that 27 % of households shared their sanitation facilities with other households. Such result is smaller than study conducted in Mozambique 71 % households shared their sanitation facilities(41). The qualitative part of this study support the above finding by most urban community live in slum, dense populated and absence of space to construct basic sanitation facilities so that it leads urban dwellers to shared their sanitation facilities even rented households shared their sanitation facilities with others households. "*The reason of sharing sanitation facility was similarly lack of space, live in slum area and households that rented their home they used the latrine together*" (FGD by most of participants)

In the present study it has been interesting to notice that the presence of basic sanitation facilities was 2.8 times higher in households who lived in their own house than rented either from kebele or private. This finding is smaller than study conducted in Debretabor town in Amhara region that focused on sanitation facilities. (57). Such variation might be in this study focused on basic sanitation facilities, difference in Scio economic development in each city, municipality urban planning activities that may influence the urban community to have its own house and lack of space in urban slum that affect to have basic sanitation facilities, shortage of money that may influence house ownership and even by now most cities becoming over crowded due to rural to urban migration that may increase sharing of sanitation facilities.

Qualitative study of key informant interview supported the above finding in that new house construction in the town brings the urban community to had basic sanitation facilities. " *By now new house contraction in the town increased therefore basic sanitation facilities also constructed and used, the former house used traditional pit latrine"*

As study revealed households who had high income level 2.7 times higher to have basic sanitation facilities than those who had low income level. It is in line with a study in most sub Sharan Africa countries(61). And it is smaller than a study conducted in Nigeria and Indonesia (42, 59). Such discrepancy might be difference in urban business (job) activities, rural to urban migration that may influence economic development in the town and little intervention on in economy development activities by government. Even in a town most house wife remain at home without job that may influence family monthly income such situation may affect to have basic sanitation facilities. In a

family that separately live in different town for the sake of job that may affect household monthly income specially those family live in together with their child may affected by low family income which also affect basic sanitation facilities availability.

This finding also supported by FDG qualitative study the main reason not to had basic sanitation facilities were low income level of the household. "*The reason not to have basic sanitation facilities is low income level of the households and the reason for sharing sanitation facilities similarly low income level of the households" (most participants)*

Another finding in this study were the age of the households between 1 – 4 years and 4 – 8 years were less likely to had basic sanitation facilities. The finding is discrepancy with study conducted in Ethiopia and Nigeria family size positively associated with improved sanitation facility((52) (42)).the probable reason for the above variation might be households that have large family size may upgrade or construct new basic sanitation facilities to use the whole family privately. Another reason might be in a households that have high income per months may have or construct new basic sanitation facilities in each child room to have privacy for each children.

Whereas in this study male headed households were significantly associated with basic sanitation facilities. The finding is similar with study conducted in Ethiopia and Nigeria male headed household, were significantly associated with improved sanitation facilities(42, 54). Such situation might be due to married house holed have good opportunity to save money since both of them have different job opportunity, even male headed households can construct basic sanitation facilities by his own human power so it leads to have basic sanitation facilities.

Another finding in this study revealed that total improved sanitation facilities accounts 54 %. It is greater than EDHS 2016 report (50) and again the finding also greater than study conducted in Ghana and Nigeria (42, 43). Such variation might be in this study the present urban health extension program focused on improved sanitation facilities weather it is shared or not with other family. And by now most health sector WASH activity monitoring and evaluation focused on improved sanitation facilities that was the former indicator before SDG goal adapted therefore such situation increase improved sanitation facilities.

7. STRENGTH AND LIMITATION OF THE STUDY

Strength

- The use of both quantitative and qualitative methods of data collection enable to have better information and supplement the quantitative findings
- The study was community based particularly addressing urban community

Limitation

- Since the data collector were urban health extension they may relate with their daily activities and inflate basic sanitation status compared to the real finding.
- In the qualitative part this study lacked large representativeness of FGD participant by sex, residence and living standards.
- This study design (cross- sectional) which measure the exposure and out come at the same time which may not show strong relationship between outcome variable and exposure as longitudinal study.

8. CONCLUSION

Based on the finding of this study the following conclusion were made

The status of basic sanitation facilities in Gonder, Desse and Bahir dar city administration was 27.6 %. Income level, house owner ship, family size and sex of the households were founds to be independent predictor of the status of basic sanitation facilities.

The most reason not to have basic sanitation facilities were lack of money, lack of space, low awareness on the benefit of basic sanitation facilities and using pit latrine together with rented households. The reason for sharing sanitation facilities was most urban community live in slum, dense populated and absence of space to construct basic sanitation facilities.

9. RECOMMENDATION

Based on the finding of this study it is recommend that

- The government and other stake holder better to accelerate economic activities to increase household income level through by providing space and loan for retailer, encourage house wife to have their own income or job and collaborate with small scale enterprise office to increase household income level.
- Urban municipality and the mayor office better to encourage people to save money through house association in order have his own private house by giving land for construction, expanding real state and apartment construction.
- To get high effort on basic sanitation facilities the Government better to encourage people to go to marriage. Marriage may a good opportunity to save money so it leads availability of basic sanitation facilities in the households.
- Monitoring and evaluation of basic sanitation activities by regional health bureau, zonal health department and woreda health office to achieve basic sanitation facilities for all
- Regional health bureau and other stake holders better to focus on promotion on SDG goal and attention should be given by all concerned body for the achievement of SDG goals in WASH to bring some stride on it.

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11. APPENDIXES

Annex 1

Hello! My name is …….. I am here on behalf of, Solomon Ayalew Teka a student in Bahir Dar University, college of medicine & health sciences School of Public Health. He is conducting a research for the partial fulfillment of the requirements for the degree of masters in water sanitation and hygiene (WASH) on basic sanitation facilities and associated factors in city administration of Amhara region.

I am going to ask you some questions that are related with basic sanitation facilities and associated factors. Your name will not be written in this form and the information you give is kept confidential and used only for this study. Only principal investigator and supporter have the information. If you do not want to answer all or some of the questions, you do have the right to do so. However, your willingness to answer all of the questions would be appreciated. Would you participate in responding to the questions in this questionnaire? ------Yes --------No

Name and Signature of participant of the study _____ Date _____

Name and signature of data collector _____ Date_____

Annex 2. Research questioner - English version

Structured questionnaire to assess access basic sanitation facilities and associated factors in city administration of Amhara region 2019.

Study participant identification

Name of House hold head ---------- City ---------- kebele ---------- sub – kebele (sefer) ---------- House hold code ----------Date of interview ---------- Name of interviewer ----------Signature ----------

Instruction:-Encircle the respondent's response on the alternative one and write the answer for open ended question on the space provide (if any)

Part one - Socio demographic characteristics

No	Question	Possible Response /answers	Remark
101	Sex of the respondent	Male ---------- 1 Female ---------- 2	
102	Age of respondent	---------- years	
103	Educational status of respondent?	Illiterate ---------- 1 Literate ---------- 2	
104	Total number of the house hold?	Male ---------- 1 female ---------- 2 Total ---------- 3	
105	House owner ship?	Private ---------- 1 Rented from kebele --------- 2 Rented from private--------- 3 Others, specify ---------- 4	
106	Marital status of house hold ?	Married ---------- 1 Single ---------- 2 Divorced ---------- 3 Separated ---------- 4 Windowed---------- 5	

107	Occupation of house hold head?	housewife/housework ---------- 1 merchant---------- 2 daily laborer---------- 3 government employee---------- 4 others specify ---------- 5		
108	Religion of respondent?	Orthodox---------- 1 Muslim---------- 2 Other specify ---------- 5		
109	Distance from the nearest health institution?	---------- Km or Meter		
110	Total No of under five children	Yes ---------- 1 No ---------- 2		
111	Presence of school children	Yes ---------- 1 No ---------- 2		
112	Presence of health extension in the kebele	Yes ---------- 1 No ---------- 2		
113	Health worker advice on basic sanitation	Yes ---------- 1 No ---------- 2		
114	Availability of land space	Yes---------- 1 No ----------2		
111	**Household economic status (Does you/your household member have/poses the following)?**			
1	House hold monthly income	----------		
2	Bank account	Yes ---------- 1	No ---------- 2	**Birr-------**

3	If yes for Q.2 , How money birr Do you have	---------- birr		
4	Electricity	Yes ---------- 1	No ----------2	
5	Which of the following dose your house hold own? (Read all option circle and check all that apply)	1. Mobil phone 2. Television 3. Refrigerator 4. Chair / sofa 5. Table 6. Shelf (cloth , equipment) 7. Stove 8. Electric mitad 9. Bed with cotton /sponge/spring mattress 10. Computer / laptop 11. Radio / tape 12. Caw milk/ ox /sheep /got 13. Business car/home car 14. Hotel/restaurant/business shop 15. Farm land		
6	Other house hold asset / income	Specify ----------		
Housing condition				
9	Main material of the floor	Earth (soil) ---------- 1 Cement ---------- 2 Ceramic---------- 3 Wooden/bamboo ---------- 4 Other specify ---------- 5		
10	Main material of the wall	Wooden with mud ---------- 1 Mud with cement ---------- 2 Bricks---------- 3 Blockets ---------- 4 Other specify ---------- 5		
11	Main material of the roof	Corrugated iron sheet ---------- 1 Wood ---------- 2 Cement ---------- 4 Thatched ---------- 5 Other specify ---------- 6		

Part two – the status of basic sanitation facilities

201	Do you have basic sanitation facilities (improved latrine, not shared , in the premises)	Yes ---------- 1 No ---------- 2	Observe
202	If the answer for question 201 is No Reason not to have basic sanitation facilities	High construction cost ---------- -1 High operational cost---------- 2 Absence of human power---------3 Absence of land spaces---------- -4 Absence of water---------- 5 Latrine far apart---------- 6 Presence of flood----------7 Other specify ---------- 8	
203	What kind of sanitation facility do you have ? (confirm by observation)	V Pour flush latrine ---------- 1 IP (ventilated improved pit latrine)---------- 2 Pit latrine with slab ---------- 3 Traditional pit latrine ---------- 4	Observe type of sanitation facilities
205	If you have Pour flush latrine: Where does it flush to? (confirm by observation)	Flush to piped sewer system ---------- 1 Flush to septic tank---------- 2 Flush to pit latrine ---------- 3 Flush to open drain/elsewhere---------- 4 Other specify ---------- 5	
206	Does your sanitation facility leak or overflow waste water at any time of the year?	Never---------- 1 Yes sometimes ---------- 2 Yes frequently ---------- 3	Observe leakage

207	Do you share this facility with others who are not members of your household?	Yes---------- 1 No ---------- 2	
208	Where is this toilet facility located?	In own dwelling---------- 1 In own yard/plot ---------- 2 Elsewhere ---------- 3	Observe
209	Do hand washing facility available near latrine facility? (Observe)	Yes ---------- 1 No---------- 2	Observe
210	Has your (pit latrine or septic tank) ever been emptied?	Yes emptied ---------- 1 Never imputed ---------- 2	
211	The answer for Q .120 is yes, where were the contents (excreta) emptied and disposed to?	Removed using a truck---------- 1 Buried in covered pit ---------- 3 Buried in un covered pit ---------- 4 Open ground ---------- 5 Water bodies ---------- 6 Other specify ---------- 7	
212	If you have not emptied your latrine what makes difficult?	Emptying cost is higher ---------- 1 No service provider ---------- 2 Latrine design not suitable ---------- 3 Other specify ---------- 4	
213	Urban health extension model house hold graduations	Yes ---------- 1 No ---------- 2	
Part three - Knowledge about basic sanitation facilities			

301	Do you know different latrine options?	Yes ---------- 1 No ---------- 2	
302	If the answer is yes for Q. 301 , what type of latrine do you know about?	Pour flush ---------- 1 Ventilated improved pit latrine---------- 2 Pit latrine with slab---------- 3 Traditional pit latrine---------- 4 Other specify ---------- 5	
303	Do you know the advantage of basic sanitation facilities?	Yes ---------- 1 No ---------- 2	
304	If the answer is yes, for Q.303, What is the advantage of basic sanitation facilities?	better to keep our health ------ 1 comfortable to use ---------- 2 more privacy ---------- 3 keep dignity ---------- 4 Other specify ---------- 5	
305	What is the disadvantage of traditional pit latrine?	Bad smell ---------- 1 Attract flies ---------- 2 Cost to repair ---------- 3 Difficult to clean ----------4 Over flow ---------- 5 Other specify ---------- 6	
306	What kind of latrine would you most prefer for your family?	Pour flush ---------- 1 Ventilated improved pit latrine ---------- 2 Pit latrine with slab ---------- 3 Traditional pit latrine ---------- 4 Other specify ---------- 5	

307	What is disadvantage of sharing pit latrine with other house hold? (multiple answer is possible)	Increase health risk ---------- 1 Not conformable to use ---------- 2 No privacy ---------- 3 It will not clean ---------- 4 No health risk ---------- 5 I don't know ---------- 6 Other specify ---------- 7	
308	What is the advantage of emptying pit latrine (feacal sludge or excreta)? (multiple answer is possible)	To remove excreta out of the compound --------- 1 To increase life span of our latrine ---------- 2 To decrease health risk ---------- 3 For treatment and safe disposal of excreta ------ 4 I don't know ---------- 5 Other specify ---------- 6	
309	If you have basic sanitation facilities , What initiate to have	Self-initiation ---------- 1 By seeing neighborhood ---------- 2 Health worker advice---------- 3 We know the benefit (awareness) ---------- 4 Government body(kebele) support---------- 5 Participating in CLTHS triggering---------- 6 Scholl children ----------7 Other specify---------- 8	
Part four – Attitude toward basic sanitation facilities			
401	Do you agree that, people prefer to build basic sanitation facilities than buying other equipment?	Agree ---------- 1 Disagree ---------- 2	
402	Do you agree basic sanitation facilities better to keep health than traditional pit latrine?	Agree ---------- 1 Disagree ---------- 2	
403	Do you agree emptying latrine will keep the health of the community?	Agree ---------- 1 Disagree ---------- 2	

404	Do you agree sharing of pit latrine with other house hold will cause health risk?	Agree ---------- 1 Disagree ---------- 2	
405	Do you agree environmental factors like flood will affect basic sanitation facility availability?	Agree ---------- 1 Disagree---------- 2	
406	Do you agree water availability in the compound affects to have basic sanitation facilities?	Agree ---------- 1 Disagree ---------- 2	

Annex - 3 Questioner For qualitative part

Guiding questions for focus group discussion

Introduction and consent

Thank you for agreeing to participate. We are very interested to hear your valuable opinion on how the community in your Keble access basic sanitation facilities. The purpose of this study is to know the status of basic sanitation facilities and associated factors. The information you give us is completely confidential, and we will not associate your name with anything you say in the focus group. We would like to tape (record) the discussion, So that we can make sure to capture the thoughts, opinions, and ideas we hear from the group. No names will be attached to the focus groups and the tapes will be destroyed as soon as they are transcribed. You may refuse to answer any question or withdraw from the study at any time. We understand how important it is that this information is kept private and confidential. We will ask participants to respect each other's confidentiality. If you have any questions now or after you have completed the questionnaire, you can always contact a study team member like me, or you can call the research team leader by the following address 093452523859.

Questions for FGD that selected from residents of selected kebele related to basic sanitation facilities and associated factors.

1. Are all residents in your Keble have a toilet facility? How many households have toilet facilities in your Keble? What type of toilet facility is common in your residence? Do

residents in your Keble have basic sanitation facilities? What is the difference between basic sanitation facilities and traditional pit latrine? Where is most sanitation facilities located What is the advantage of basic sanitation? What is the dis advantage of traditional pit latrine? What are the major barriers/problems to contract basic sanitation facilities? What will be the possible suggested solution? What is required to solve the problem? Who is responsible to solve such problem?

2. Do residents in your Keble share their latrine with other hold? Why some house hold share their latrine with other house hold? Do you believe that sharing of pit latrine will cause health risk? What health risk will happen? What is the solution to solve such problem?
3. Do all house hold in your kebele emptied their latrine? If yes, how is the emptied fecal sludge disposed in the environment? If No, what is the reason not to empty their latrine? How is the feacal sludge (excreta) managed in the community? If the fecal sludge is not disposed safely in the nearby the environment what kind of the health related problem it brings? What is your possible suggestion to solve the problem? Who is responsible for such problem?
4. Is there anything more you would like to add?

That concludes our focus group. Thank you so much for coming and sharing your thoughts and opinions with us.

.Guiding questions for key informant interviews

Introduction and consent

Hello! I am from Bahir Dar University. Thank you very much for allowing us to meet you today. We are conducting a study to access basic sanitation facilities and associated factors in addition to collecting primary data from the community, we need to conduct interviews of key stakeholders to get their views on the area of interest. You are a key person in the assessment basic sanitation facilities in city administration of Amhara region. Therefore, we would like to ask you some questions on this area of interest. The interview may take about 20 minutes of your time. Please feel free to refuse to answer any question if you do not want to do so. Your answers will be crucial for this study, and Do you have any question for us? If no, may I start the questions now?

Questions regarding to the status of basic sanitation facilities

For Zonal health department, town health office, water and sewerage office

1. How many portion of the community have access to basic sanitation facilities in the town?
2. How many of the community have improved latrine that share with other households? What makes the community to share their latrine?
3. If all your households in the community is not have basic sanitation facilities what is the possible reason not to construct basic sanitation facilities?
4. What is the role of your office on increasing access to basic sanitation facilities to the community?
5. How many of the community have traditional pit latrine? What is the reason not to up grad in to basic sanitation?
6. Do the town have fecal sludge treatment and disposal system? Where is the fecal sludge disposed? What is the reason the Town not to have feacal sludge treatment and disposal system?
7. Are you aware of sustainable development goal (SDG) 2030 goal related to basic sanitation ? If so how is your effort to implement or achieve basic sanitation related plan in the town?

Questions regarding to basic Sanitation facilities for urban health extension professionals and supervisors for each Kebele

1. Are all residents in your kebele have a toilet facility? How many households have basic sanitation facilities? What is the reason not to have basic sanitation facilities?
2. How many of the house hold had improved latrine that shared with other households? What is the possible reason that the households shared there latrine in your Keble?
3. How the feacal sludge (excreta) in house hold level is emptied? How is it transported? How is treated and disposed in the environment? Do the fecal sludge disposed safely without creating health risk? If the fecal sludge is not disposed safely what is the reason? What kinds of health problem do you observe related to unsafe disposal of fecal matter?
4. How many of the households have traditional pit latrine? What makes difficult to up grad in to basic sanitation?
5. Are you aware of sustainable development goal (SDG) 2030 goal related to basic sanitation services? If so how is your effort to implement or achieve basic sanitation related plan in the town?
6. Is there anything more you would like to add?

Annex - 4 Amharic version consent form

በአማራ ብሔራዊ ክልላዊ መንግስት ጤና ቢሮ እና በባህር ዳር ዩንቨርስቲ የህክምና ጤና ሳይንስ ኮሌጅ ጋር በመተባበር በአማራ ክልል በሚገኙ ከተሞች የመሰረታዊ የሳይንቴሽን አቅርቦት ጥናት ለማከሄድ ከሚመለከታቸው አካላት ጋር ለመስራት የተዘጋጀ መጠይቅ

የጥናቱ ተሳታፉዎች መረጃ መስጫና ፍቃድ መጠየቂያ ቅፅ

ጤና ይስጥልኝ ስሜ----------ይባላል እዚህ የመጣሁ ለባህር ዳር ዩንቨርስቲ በህክምናና ጤና ሳይንስ ኮሌጅ የውሃ ሳንቴሽን እና ሀይጅን ተማሪ የሆኑት አቶ ሰለሞን አያሌውን ወክየ ነው፡፡ እርሳቸው በመሰራታዊ የሳይንቴሽን አገልግሎት በተመለከተ በአማራ ክልል ከተሞች ላይ ምርምር እያካሄዱ የገኛሉ፡፡ ስለዚህ በዚህ ጥናት ለመሰታፍ የተመረጡ ስለሆነ በጥናቱ በተዘጋጀው ጥያቄ መለስ የዕርስዎን ፍቃድ በአክብሮት እንጠይቃለን፡፡በመጠየቁ ውስጥ የሚሰበሰበው ማንኛውም መረጃ ሙሉ በሙሉ በሚስጢር የሚጠበቅ መሆኑን ልናረጋግጥልዎሰት እንወዳለን፡፡እንዲሁም እርስዎ የሚሰጡት መራጃ ሌላ ሰው በማያውቅበት ዘዴ በሚስጥራዊ ቁጥር ተመዝግቦ ይቀመጣል፡፡

- በዚህ መሰረት በጥናቱ ለመሰታፍ ፍቃደኛ ይሆናሉ አዎ----------አይደለም----------

- የጥናቱ አላማና ጥቅም ተገንዝቤ እና አውቄ በዚህ ጥናት ለመሳተፍ በፍቃደኝነት ተስማምቻለሁ፡፡

የተሳታፊ ሙሉ ስም---------- ፊርማ---------- ቀን----------

ቃለ መጠየቅ አቅራቢ ሙሉ ስም---------- ፊርማ---------- ቀን----------

Annex 5. Questioner Amharic version

በአማራ ክልል ጤና ጥበቃ ቢሮ እና ባህር ዳር ዩኒቨርሲቲ ህክምና እና ጤና ሳይንስ ኮሌጅ ጋር በመተባበር በክልሉ በሚገኙ ከተሞች (ባህርዳር፣ ጎንደር፣ ደሴ) የወሳኝ ሳኒቴሽን አቅርቦት እና ተያያዥነት ያላቸውን ሁኔታዎች (Basic sanitation facilities and associated factors) **ያሉበትን ደረጃ ለማወቅ የተዘጋጀ መጠይቅ።**

ጥናቱ ተሳታፊ ሙሉ መረጃ

የአባወራ/ እማወራ ስም---------- ከተማ----------

ቀበሌ----------ሰፈር---------- የቤቱኮድ----------

መጠይቁን ያሚላው ሰው ስም ---------- ፊርማ----------

ቀን ----------

ክፍልአንድ፡- ማህበራዊና ኢኮኖሚያዊ ሁኔታዎች

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
101	የአባወራ/እማወራ ፆታ	1. ወንድ 2. ሴት	
102	የአባወራ/እማወራ እድሜ	---------- ዓመት	
103	የአባወራ/እማወራ የትምህርትደረጃ	1. ያልተማረ 2. የተማረ	
104	የቤተሰብ ብዛት	1.ወንድ ---------- 2. ሴት ---------- 3. ድምር----------	
105	የሚኖሩበት ቤት የማን ነው ?	1. የግላችን/የራሳችን 2. የቀበሌ 3. ከግለሰብ ተከራይተን 4. ሌላ ይጠቀስ----------	

106	የአባወራ/እማወራ የጋብቻ ሁኔታ?	1. ያገባ 2. ያላገባ 3. የፈታ 4. ተለያይተው የሚኖሩ 5. የሞተባት	
107	የአባወራው/እማወራ የስራ ሁኔታ?	1. የቤት እመቤት 2. ነጋዴ 3. የቀን ሰራተኛ 4. የመንግስት ሰራተኛ 5. ሌላ ይጠቀስ----------	
108	የአባወራው /እማወራ ሐይማኖት?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላይጠቀስ----------	
109	መኖሪያቤታችሁ ከጤና ተቋማት በምንያህል ኪ..ሜትር(ሜትር) ይርቃል	----------ኪ..ሜ(ሜትር)	
110	ከአንድ ዓመት በታች ህፃናት አለ?	1.አዎ 2.የልም	
111	ትምህርት የሚማር ልጅ አለ	1.አዎ 2.የልም	
112	የጤና አክስተንስን ባለሙያ መኖር	1.አዎ 2.የልም	
113	የጤና ባለሙያ ምክር	1.አዎ 2.የልም	
114	መስርየ በታ መኖር	1.አዎ	

		2.የልም	
115	ቤተሰብ ኢኮኖሚና /የገቢ ደረጃ		
1	የቤተሰቡ ወርሃዊ ገቢ	----------ብር	
2	የባንክ አካውንት አለዎት?	1. አዎ 2. የልም	
3	የብንክአካውንት ካለዎት ምን ያህል ብር አለዎት?		
4	ኤሌክትሪክአለዎት?	1. አዎ 2. የለም	
5	ከሚከተለው ውስጥ በቤትዎ ያለው ንብረት የቱነው? (ሁሉን መልስ አንብብና መኖራቸውን አረጋግጥ)	1. ሞባይል 2. ቴሌቪዥን 3. ፍሪጅ 4. መቀመጫ/ሶፋ 5. ጠረጴዛ 6. የልብስ /ዕቃ/ መደርደሪያ 7. እስቶቭ 8. ኤሌክትሪክ ምጣድ 9. አልጋ የስፖንጅ /ጥጥ/ ስፕሪግ ፍራሽ 10.ኮምፒውተር (ላፕቶፕ) 11.ሬድዮ/ ቴፕ	
6	ሌላ የቤተሰብ ገቢ ካለ ይጠቀስ		
9	የቤቱ ወለል ከምንድን ነው የተሰራው?	1. ከአፈር 2. ስሚንቶ 3. ሴራሚክ 4. ቀርቀሃ/ጣውላ	

10.	የቤቱግድግዳ ከምንድን ነው የተሰራው?	1. ከንጨትናጭቃ 2. ከጭቃሆኖ በስሚንቶ የተገረፈ 3. ፌሽክላ ጡብ 4. ብሉኬት	
11	የቤቱ ጣራ ከምንድን ነው የተሰራ?	1.ከቆርቆሮ 2. ጣውላ 3. ስሚንቶ 4.ከሳር	

ክፍልሁለት፡- መሰረታዊ የሳኒቴሽን አቅርቦት ያለበት ደረጃ

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
201	መሰረታዊ የሳኒቴሽን አቅርቦት አለዎት?	1. አዎ 2. የለም	
202	ለጥያቄ 201 መልሱ መሰረታዊ የሳኒቴሽን አቅርቦት የለም ከሆነ ምክንያቱ ምንድን ነው?	1. የመገንቢው ወጭ ከፍተኛ ስለሆነ 2. ማስትግኛዉ ገንዘብ ከፍተኛ ስለሆነ 3. የሰውሃይል /ችሎታው ስለሌለን 4. መስሪያ ቦታ ስለ ሌለን 5. ውሀ ስለለን 6. ጎርፍ ስለምያስችግረን 7. ሌላ ይጠቀስ----------	

203	ለ 201 ጥያቄ መልሱ አዎ ከሆነ ምን አይነት መጸዳጃቤት ነው የምትጠቀሙ?	1. በውሃ የሚሰራ መፀዳጃ ቤት 2. ሽታ አልባ መፀዳጃ ቤት 3. ከስሚንቶ ሊሾ የሆነ /ስላብ ያለው መፀዳጃቤት 4. በስሚንቶ ያልተሰራ/ ስላብ የሌላው መፀዳጃ ቤት	የመፀዳጃ ቤቱን አይነት ተመልከት
204	መሰረታዊ የሳኒቴሽን አቅርቦት ካለዎት እንዲሰሩ ምን አነሳሳዎት?	1. በራስ ተነሳሽነት 2. ጎረቤት በማየት 3. በጤና ባለሙያ ምክር 4. ጥቅሙን ስለምናውቅ 5. የቀበሌ /መንግስት / ድጋፍ	
205	በውሃ የሚሰራ መፀዳጃቤት ካለዎት ፍሳሹ ወደየት ነው የሚሄደው?	1. ወደ ፍሳሽ ማውረጃ ቦይ 2. ወደ ማጠራቀሚያ ሴፕቲክ ታንክ 3. ወደ ሽንት ቤት 4. ወደ ወንዝ /ሌላ ቦታ 5. ሌላ ይጠቀስ----------	
206	መፀዳጃቤትዎ ፍሳሽ ወደሚኖርበት አካባቢ ያፈሳል /ያስወጣል?	1. የለም 2. አዎ አልፎአልፎ 3. አዎ ሁልጊዜ	ተመልከት
207	መፀዳጃ ቤት ዎን ከሌላ አባወራ/ግለሰብ ጋር በጋራ ይጠቀማሉ?	1. አዎ 2. የለም	
208	መፀዳጃ ቤትዎ የት ነው የተሰራው?	1. በ መኖሪያ ቤት ውስጥ 2. በ መኖሪያ ግቢ ውስጥ 3. ከ ግቢ ውጭ	ተመልከት
209	መፀዳጃቤት አጠገብ የእጅ መታጠቢያ አለ	1. አዎ 2. የለም	ተመልከት

210	መፀዳጃ ቤትዎን /ሴፕቲክታንክ አስመጥጠው ያውቃሉ?	1. አዎ 2. የለም	
211	መፀዳጃቤትዎን አስመጥጠው ካወቁ የተመጠጠው ፍሳሺ ወደ የት ተወገዳ/ገባ	1. በተሸከርካሪ ተመጠጠ 2. ወደ ጉድጓድ አስገብተን በአፈር ሸፍነነዋል 3. ወደጉ ድጓድ አስገብተን በአፈር አልተሸፈነም 4. በመሬት ላይ ነው የፈሰሰ 5. ወደውሃ /ወንዝ የፈሰሰ 6. ሌላ ይጠቀስ----------	
212	መፀዳጃቤትዎን ካላ ስመጠጡ ምክንያቱ ምንድን ነው?	1. ማስመጠጫ ገንዘቡ ከፍተኛ በመሆኑ 2. የሚመጥ መኪና/ ተሸከርካሪ ስለሌለ 3. የመፀዳጃ ቤቱ አሰራሩ ስለ ማይመች 4. ሌላ ይጠቀስ----------	
213	በ ከተማ ጤና ኤክስቴንሽን ሞዴል ቤተሰብ ተመርቀዋል?	1. አዎ 2. የለም	

ክፍል ሶስት፡- ስለ መሰረታዊ ሳኒቴሺን ያለው ግንዛቤ/እውቀት

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
301	የተለያዩ የመፀዳጃ አይነቶችን ያውቃሉ?	1. አዎ 2. የለም	
302	መልስዎ አዎ ከሆነ ምን አይነት መፀዳጃ ቤት ያውቃሉ?	1. በውሃ የሚሰራ መፀዳጃ ቤት 2. ሺታ አልባ መፀዳጃ ቤት 3. በ ስሚንቶ/ ስላብ የተሰራ መፀዳጃ ቤት 4. የተለምዶ መፀዳጃቤት 5. ሌላ ይጠቀስ----------	
303	መሰረታዊ የሳኒቴሽን አቅርቦት ከተለምዶ መፀዳጃቤት ላቅ ያለ ጥቅሙን ያውቃሉ?	1. አዎ 2. የለም	

304	መልስዎ አዎ ከሆነ መሰረታዊ የሳኒቴሽን አቅርቦት ጥቅም ምንድን ነው?	1. በተሻለ ሁኔታ ጤንነታችን ይጠብቅልናል 2. ለመጠቀም ምቹ ነው 3. ከአደጋ ይጠብቀናል 4. ደረጃችንን ከፍያ ደርገዋል 5. ሌላ ይጠቀስ----------	
305	የተለምዶ መፀዳጃ ቤት ጉዳቱ ምንድን ነው?	1. መጥፎ ሽታ 2. ዝንብ ይስባል 3. ለመጠገን ገንዘብ ማስፈለጉ 4. ለማጽዳት አስቸጋሪ ነው 5. ሲሞላ መፍሰሱ 6. ሌላ ይጠቀስ	
306	ለእርስዎ ቤተሰብ የሚመርጡት መፀዳጃቤት የቱ ነው?	1. በውሃ የሚሰራ መፀዳጃ ቤት 2. ሽታ አልባ መፀዳጃ ቤት 3. በስሚንቶ ሊሾ /ስላብ ያለው መፀዳጃ ቤት 4. የተለምዶ መፀዳጃቤት 5. ሌላ ይጠቀስ----------	
307	መፀዳጃ ቤት በጋራ መጠቀም ያለው ጉዳት ምንድን ነው?	1. የጤና ችግር ያመጣል 2. ለመጠቀም አይመችም 3. ለደህንነታችን አደጋ አለው 4. ንፁህ አይሆንም 5. የጤና ችግር ያልሆነ	
308	መፀዳጃቤትን ማስመጠጥ ያለው ጠቀሜታ ምንድን ነው?	1. ከግቢ ለማስወገድ ብቻ 2. የመፀዳጃቤቱን እድሜ ለማራዘም 3. የጤና ችግር እንዳያመጣ 4. ፍሳሽ ቆሻሻውን ለማከምና ለማስወገድ 5. አላውቅም 6. ሌላ ይጠቀስ----------	

ክፍል አራት፡- የመሰረታዊ ሳኒቴሺን አመለካከ ትጥያቄዎች

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
401	ሰዎችመሰረታዊ የሳኒቴሽን አቅርቦት መስራትን ይመርጣሉ ሞባይል ከመግዛት ይልቅ?	1. እስማማለሁ 2. አልስማማም	
402	ጤናን ለመጠበቅ መሰረታዊ የሳኒቴሽን አቅርቦት ይሻላል?	1. እስማማለሁ 2. አልስማማም	
403	መፀዳጃ ቤት ማስመጠጥ የህብረተሰቡን ጤና ይጠብቃል?	1. አስማማለሁ 2. አልስማማም	
404	መፀዳጃቤት በጋራ መጠቀም የጤናችግር ያመጣል	1. አስማማለሁ 2. አልስማማም	
406	አካባቢያዊ ሁኔታ ጎርፍ መሰረታዊ የሳኒቴሽን አቅርቦት እንዳይኖረን ያደርጋል	1. አስማማለሁ 2. አልስማማም	
408	የውሃ መኖር መሰረታዊ የሳኒቴሽን አቅርቦት እንዲኖረን እና እንዳይኖረን ያደርጋል?	1. አስማማለሁ 2. አልስማማም	

አመሰግናለሁ!

የአማርኛ ኳሊቲቲቭ ጥናት መጠይቆች
ለተመረጡ የህብረተሰብ ክፍሎች የቀረበ ጥያቄ

መግቢያና ስምምነት

በመጀመሪያ ስለመጣችሁ አመሰግናለሁ የእናንተን አስተያየትና ሃሳብ በመሰረታዊ የሳኒቴሽን አገልግሎት አቅርቦት ላይ ሀሳብ እንድትሰጡኝ እፈልጋለሁ፡፡ የዚህ ጥናት አላማ በመሰረታዊ ሳኒቴሽን አቅርቦትና ተያያዥነት ያላቸው ችግሮችን ለመዳደሰስ ነው፡፡ እርስዎ የሚሰጡን መረጃ ሚስጢሩ የጠበቀ እንዲሁም ከማንኛውም ችግሮች ነፃ የሆነ ሲሆን በጥናቱ ላይ ስምወትም አይጠቀስም ስለዚህ ድምጽዎን በቴፕ እንቀርፃለን የእርስዎ ሀሳብ እና አስተያየት በመረጃነት ይያዛል፡፡ ይህ የተቀረፀው መረጃ ለጥናቱ አላማ ብቻ የሚውል ሲሆን ከጥናቱ በኋላ ወዲያውኑ ይሰረዛል፡፡ ማንኛውንም ጥያቄ መቃወም ወይንም ከጥናቱ የመውጣት መብት አለዎት፡፡ በጥናቱ ላይ እርስ በርሳችሁ እንደምትከባበሩ ተስፋ እናደርጋለን፡፡ ማንኛውም ጥያቄ ካለዎት የጥናቱን ቡድን መሪ እንዲሁም ዋና አጥኒውን ማነጋገር ይችላሉ በዋናው አጥኚ ስልክ ቁጥርም መደወል ይችላሉ 0934523859፡፡

ለተመረጡ የህብረተሰብ ክፍሎች በመሰረታዊ የሳኒቴሽን አቅርቦት ላይ የተዘጋጁ መጠይቆች

1. በእርስዎ ቀበሌ ምን ያህሉ መፀዳጃ ቤት አለው? መፀዳጃ ቤቱስ ምን አይነት ነው? መሰረታዊ የሳኒቴሽን አቅርቦት ያላቸው አሉ? በመሰረታዊ የሳኒቴሽን አቅርቦትና በባህላዊ መፀዳጃ ቤት ለው ልዩነት ምንድነው? መፀዳጃ ቤቱ የትነው የተገነባው? መሰረታዊ የሳኒቴሽን አቅርቦት ጥቅሙ ምንድን ነው? መሰረታዊ የሳኒቴሽን አቅርቦት ለመገንባት ያስቸገረዎት ምንድነው?
2. በእርስዎ ቀበሌ መፀዳጃን በጋራ የሚጠቀሙ አሉ? ለምንድነው በጋራ የሚጠቀሙበት ምክንያት? በጋራ መጠቀም የጤናችግር ያመጣል ብለው ያስባሉ? ምንአይነት የጤና ችግርስ ያመጣል?
3. በቀበሌው ምን ያህሉ ሰው መፀዳጃ ቤቱን ያስመጥጣል? ካስመጠጠ የተመጠጠው አር ወዴት ነው የሚወገደው? እማያስመጥጡ ካለ ለምንድነው መፀዳጃ ቤታቸውን እማያስመጥጡ? ከመፀዳጃ ቤቱ የሚወጣው አር በአግባቡ ካልተወገደ ምን አይነት የጤና ችግር ያመጣል?
4. መጨመር የሚፈልጉት ነገር ካለ መጨመር ይችላሉ

ለተመረጡ ባለሙያዎች የተዘጋጁ ጥያቄዎች

መግቢያና ስምምነት

እኔ የመጣሁት ከባህር ዳር ዩኒቨርሲቲ ነው፡፡ በመሰረታዊ የሳኒቴሽን አቅርቦት እና ተያያዥነት ያላቸው ችግሮችን ለማጥናት ነው፡፡ ስለዚህ እርስዎ በጥናቱ ዙሪያ መረጃ ለመስጠት ተመረጡ ስለሆነ አንዳንድ ጥያቄዎችን ልንጠይቀዎት አስበናል ፈቃደኛነዎት፡፡ ጥያቄው 20 ደቂቃ ሊወስድ ይችላል ማንኛውንም ጥያቄ ለመቃወም ወይም በጥናቱ ላይ አለመሳተፍም ይችላሉ፡፡ ስለዚህ ጥያቄ አለዎት ከለለዎት ጥያቄየን መጀመር እችላለሁ፡፡

ለዞን ጤና ባለሙያ ለከተማ ጤናእና ለውሃና ፍሳሽ ባለሙያ የቀረቡ ጥያቄዎች

1. በከተማው ምን ያህሉ የመሰረታዊ የሳኒቴሽን አቅርቦት አለው?
2. ምን ያህሉ መፀዳጃ ቤትን በጋራ ይጠቀማለ? ለምንድ ነው በጋራ መፀዳጃ ቤትን የሚጠቀሙ?
3. በከተማው መሰረታዊ የሳኒቴሽን አቅርቦት የሌላቸው ካለ ለምንድነው የሌላቸው?
4. የእርስዎ ቢሮ መሰረታዊ የሳኒቴሽን አቅርቦትን ለመጨመር ምን እየሰራ ነው?
5. የከተማው የአር ማስወገጃ ዘዴ አለ? የት ነው ሚወገደው? የአር ማስወገጃ ዘዴ ከለለ ምክንያቱ ምንድነው?

6. በሳኒቴሽን ዙሪያ የተቀመጡትን መሰረታዊ የእድገት ግቦች ያውቃሉ? ምንስ እየሰሩ ይገኛሉ?

ለከተማ ጤና ኤክስቴንሽና እና ሱፐርቫይዘሮች የተዘጋጀ መጠይቅ

1. በቀበሌው ሁሉም ህብረተሰብ መፀዳጃ አለው? ከዙህ ውስጥ ምን ያህሉ መሰረታዊ የሳኒቴሽን አቅርቦት አላቸው? ከሌላቸው የሌለበት ምክንያት ምንድነው?
2. በቀበሌውም ምንያህሉ መፀዳጃ ቤትን በጋራ ይጠቀማል? ለምንድነው በጋራ የሚጠቀሙት?
3. በቀበሌው ሰው መፀዳጃ ቤቱን ያስመጥጣል? እንዴት ነው የሚያስመጥጠውስ? አወጋገዱስ የት ነው የሚወገደው? በአግባቡ ባለመወገዱ እየመጣ ያለው የጤና ችግር ምንድ ነው?
4. በሳኒቴሽን ዙሪያ ስለ ዘላቂ የእድገት ግቦች የተቀመጡትን ግቦች ያውቃሉ? አነዚህን ግቦችስ ለማሳካት ምን እየሰራችሁ ነው?
5. መጨመር የሚፈልጉት ነገር ካለ ይጨምሩ?

ASSURANCE OF PRINCIPAL INVESTIGATOR

I, the undersigned, agreed to accept all responsibilities for the scientific and ethical conduct of the research project and for the provision of required progress reports as per the terms and conditions of the requirements of the department. I will provide timely progress report to my advisors and seek the necessary advice and approval from my advisors in the course of the research.

Name of the student: Solomon Ayalew Signature: ---------- Date: ----------

Name of the primary advisor: Dr Achenef Motebainor Signature: ---------- Date: ----------

Name of the co advisor: Genet Gedamu Signature: ---------- Date: ----------

ASSURANCE OF EXAMINERS

Name of the external examiner: ---------- Signature: ---------- Date: ----------

Name of the external examiner: ---------- Signature: ---------- Date: ----------

Name of the internal examiner: ---------- Signature: ---------- Date: ----------