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Latrine Access and factors Associated With it Among People with Physical Disability in Kombolcha Town, Amhara Region, Ethiopia

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LATRINE ACCESS AND FACTORS ASSOCIATED WITH IT AMONG PEOPLE WITH PHYSICAL DISABILITY IN KOMBOLCHA TOWN, AMHARA REGION, ETHIOPIA.

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Declaration form

Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other University, and that all the resources and materials used for the research, have been fully acknowledged.

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As members of the board of examiners, we examined this /thesis entitled “latrine access and factors associated with it among people with physical disability in kombolcha town, Amhara region, Ethiopia.” by Abuneh Getahun. We certify that the thesis/ is accepted for fulfilling the requirements for the award of the degree of masters of MPH in WASH.

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ABSTRACT

Introduction: Sustainable development goal mandates to ensure equitable sanitation, end open defecation and paying special attention to needs of people in vulnerable situations. People with physical disability are under multiple challenges to benefit sanitation services as the general population.

Objective: To determine latrine access and identify factors associated among physically disabled people in kombolcha town, 2020.

Methods: community based cross sectional study was conducted from April first to April 20 among physically disabled people in Kombolcha town. Quantitative data was collected from 374 randomly selected study participants using structured interviewer administered questioners. Key informant and in-depth interview were conducted on purposely selected individuals. The collected quantitative data was entered into Epi-Data-version 3.1 and then exported into SPSS version 23.0 for analysis. The bivariate and multivariable logistic regressions analysis was conducted. Qualitative data was analyzed thematically through repeat reading and hearing the view of respondents

Results: A total of 374 participants were included with 98.4% response rate. Prevalence of accessible latrines was found to be (22%), 95% CI (17.7-26.5) .Membership to disability association (AOR=2.162, 95% CI (1.231-3.799)), wealth status of study participants. (AOR=4.169, 95% CI (1.96-8.864)) stigma and discrimination to get latrine in last 12 months (AOR=0.212, 95% CI (0.116-0.388)) and study participant's knowledge to construct accessible latrine (AOR=4.389, 95% CI (2.446-7.87)) were predictor variables of latrine accessibility. shared/public latrine ,stigma and discrimination, poor wealth status, homelessness and lack of information provision regarding latrine accessibility were identified as barriers for inaccessible latrine from In-depth and key informant interview.

Conclusion and recommendation: latrine access among PWPDs was found to be at low . Poor knowledge of accessible latrine construction, poor wealth status, stigma and discrimination and not member of disability association increased risk of latrine inaccessibility. So, provision of trainings, income generation activities, awareness creation and join disability associations were recommended.

Keywords: *Physical disability, accessible latrine, Kombolcha town*

LIST OF ACRONYMS AND ABBREVIATIONS

BNA……. …Basic Need Approach

CRPD…….…… ...Convention on the Rights of Persons with Disabilities

ERB…….……Ethical Review Board

JMP ……Joint Monitoring Programme

KMs……Kilo Meters

PwDs…….…….People With Disabilities

PwPDs……. ..People with Physical Disabilities

SDG…….……...Sustainable Development Goal

UN……..…….United Nations

WASH…….……..….Water, Sanitation and Hygiene

WEDC……..……..… Water, Engineering and Development

WHO…….……...World Health Organizations

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1. INTRODUCTION

1.1 Background

People with disabilities (PwDs) exist in every community of the world. Two thirds of them live in low-income countries. Nevertheless, disabled women, men and children continue to be discriminated and where built latrines are available, access needs of disabled people are rarely considered (1). Physical disabilities are one form of disability which mainly expressed as mobility and balance problem of individuals under specific impairment (2).

PwDs are among the poorest of the poor and Poor people are more likely to experience a host of obstacles to health and well-being: dirty drinking water, improper hygiene and sanitation, limited health services (3, 4).

An estimated 1.6 million people die from diarrheal diseases each year due to lack of access safe water and sanitation, and PwDs face additional barriers. All of the campaigns and initiatives to improve community wide access to improved water and sanitation and to eliminate water, sanitation and hygiene (WASH) associated disease will not be succeed unless other and wise PwDs are considered as part of the general population (3).

Sanitation services and facilities are traditionally designed for the average person, which ignores communities with a variety of abilities and needs. One such group is disabled people like those who have physical limitations. The majority of PwDs do not need special facilities. Their needs can be met by ordinary services with a little extra thought, and only minor adjustments included, so that they can have equal access. In order to access their same basic needs, some people may need something a bit different The additional cost of providing inclusive sanitation is found to be only 2 to 3% (5, 6).

The prevalence of accessible latrine for people with physical disabilities was found to be lower, any type of latrine even which is be categorized under improved might not be accessible for them due to the reason that the barrier in physical structure and design, environmental factors like distance to household, social and behavioral barriers like

discrimination and stigma and other socio demographical characteristics like age, sex and income (7).

Ethiopia is one of the member states of Sustainable Development Goal (SDG) signatories, which explicitly include disability and persons with disabilities, so it is imperative to promote disability inclusion to ensure access to water and sanitation for all, including people with disabilities, by 2030. in fact the prevalence of accessible latrine to People with Physical Disabilities (PwPDs) was found to be only 34% in Amhara region Bahir Dar city, where all barriers and negative attitudes are believed to be minimal as compared with other rural areas of the state (8, 9).

1.2 Statement of the Problem

Globally more than 1 billion people are estimated to have a disability and among those more than 110 million persons with disabilities are not able to access improved WASH services. Persons with disabilities are known to have more difficulty in accessing WASH services, and poorer countries have both restricted WASH access and greater disability prevalence (10).

People with disabilities are often hidden from view and are usually not accustomed to expressing their needs .Accessing of latrine at home level escapes women from rape and violence faced during they try to take their sanitation needs often on outdoors, alone and usually at night. This has more meaning for life of women with disabilities (11).

In India two-thirds of people with disabilities practiced open defecation, over half were unable to do this without coming into direct contact with faeces and 32 % of people with some form of disability were obligated to use public latrines. This was manifested by 11.8% of them were treated for at least one episode of diarrhea per month (7).

PwPDs face numerous difficulties in accessing both the natural and built environment, lack of supportive and assistive devices like wheelchair and even where they avail, poor design and location of buildings is double burden to them (1).

In Africa the most of physically disabled people are under a challenge poor WASH access .Children with such impairments were prevented from school due to lack of accessible toilets (3).

In Ethiopia, Latrine inaccessibility makes the life of PwPDs difficult 46% and 27.4% of them had the experience of failing and injury in the latrine room respectively due to poor latrine design and construction (8).

According to the study conducted in Gondar the prevalence of accessible latrine for PwPDs were found to be only 29.2% and inappropriate design (64.4%), long distance from home (18.4%), steps along the path to latrine (12.6%) and not functional (4.4%) were reasons for inaccessibility of latrines (12).

Including Joint Monitoring Programme (JMP) almost all of water and sanitation surveys normally do not cover needs of disabled people. For example out of the reviewed 289 water and sanitation surveys globally, none seeking the views and situation of disabled people(13).

Nationally in Ethiopia bulky of evidence is exiting regarding the level of latrine access for the general population, but still sufficient data didn't avail on the issue to those population groups living with some form of physical disabilities. Not only this but also possible interventional areas were not identified well.

This study was designed to be conducted in Kombolcha town because since the town is one of few highly industrialized towns in Ethiopia (more than 17 industries) and occupational hazards were proven to be higher (37%) in workers of those industries. This contributes to higher prevalence of physical disability in the town (14, 15).

Therefore, this study can fill the exiting gaps by determine level of latrine accessibility and associated factors with it among physically disabled people through complementary quantitative and qualitative methods.

1.3 Significance of the Study

It is anticipated that this study could provide a valuable data, which can be used by local or national level governmental and non-governmental policy makers and implementers so

as to plan regarding latrine accessibility for PwPDs. The study can also contributes Current evidence based information on the levels of latrine access to those population groups with physical disability and the factors associated.it will also advocate and show the gaps in the implementations of sanitation polices on ground level with regard to PwPDs.in addition the study would create an opportunities for other interested scholars to search more in detail and provide current actual base line data for program monitoring and evaluation purposes.

2. LETRITURE REVIEW

2.1 Latrine Access for PwPDs

World Health Organization (WHO) recommend that where possible, toilet and bathing facilities be located in the same room, for ease of use by PwDs. SDG seeks all of its developmental implementations to be inclusive of those vulnerable and previously neglected population groups including people with some forms of physical disabilities. More of in its 6.2 section clearly put to provide special attention to them on equitable sanitation accesses (1, 9).

According to United Nations development report on disability in some developing countries, more than 25 per cent of persons with disabilities not having an indoor toilet in their dwelling and Among eight developing countries, 17 per cent of persons with disabilities reported that their toilet at home was hindering or not accessible. The same report on 45,000 public toilets worldwide, mostly in developed countries, found that 31 per cent were not accessible for wheelchair users (16).

Children with disabilities are less likely to benefit from WASH in Schools programmes as only 50% of children with disabilities attend school globally. Most of them often prevented from attending schools due to lack of accessible toilets. Particularly school drop rates were higher in students with physical disabilities. On the other hand in Brazil on 2016 only 46% of primary schools have accessible toilet for students with mobility impairment (17).

According to the study conducted on a group of ten disabled women with physical impairments in India, with the aim of understanding their day-to-day mobility needs. Nine of them were not access to latrine and bathing service without difficulty (1).

The study conducted on the primary health care units of Brazil shows 77.7% of toilets have inaccessible doorways, toilet seats and toilet paper dispensers were evaluated mostly as inaccessible to the physically disabled people. Most toilets were considered inaccessible for not having enough space for wheelchair movement, especially regarding

rotational movements (64.3% for 90˚, 74.5% for 180˚, and 78.3% for 360˚), which prevents the independent and private use of the environment (18).

According to the cross sectional survey conducted in Bangladesh, Cameroon, India and Malawi indicates 53%, 86%, 58% and 86% of people with any type of disability respectively were accessed to sanitation facility without contact with faeces. But the prevalence of accessible latrine to PwPDs were found to be very lower, 47% in Cameroon, 26% in India and 24 % in Malawi (7).

The study in Nepal also shows that 83.3% of the latrines for disabled people were found to be improved and not shared. But still 14.8% of people with disability face a contact with faces and urine due to inaccessible latrines (19).

According to the cross sectional study conducted in Guatemala the prevalence of improved latrine among households that include people with disabilities was found to be 89% but only 71% were accessible to them. Qualitative study conducted in Malawi also shows that only 36 % of disabled people were access to acceptable latrine services (20).

According to the cross sectional study conducted in Meru ,Kenya on factors affecting the accessibility of building for physically handicapped people, regarding latrine accommodation 75.9% of respondents agreed that the installation of grab/handrails as a measure of enhancing latrine access to physically handicapped people,72% of respondents felt availability of spacious sliding door is a vital thing for them where as 64% also recognized that the centrally located larine is the measure of good accommodation for physically PwPDs (21).

A case study by Hong Kong central library on two projects which includes 7 participants with physical impairment and one hearing impaired person identifies distance of latrine as one of the a challenge for inaccessibility of latrine, that 43% and 32.5% of latrine were not conveniently locates and have adequate space so that not accessible to them (22).

There are many obstacles which prevent access to clean water and to sanitation facilities for disabled people among others physical (distance to latrines or defecation areas, rough paths, narrow entrances and lack of space inside, steps to latrines, slippery floors,

difficulty squatting (nothing to hold onto), need to put hands on latrine floor to balance), institutional (discriminatory legislation, policies/strategies that ignore disabled people, lack of consultation with disabled people, lack of information about accessible design options, training, or experience on accessible designs, lack of mechanisms or forums for consultation with disabled people), economic (cost of constructions, user fees), and social/cultural (low status, harassment, negative traditional beliefs, stigma, shame, overprotection, isolation, misinformation) (23).

Among the laws, policies in which the government of Ethiopia has adopted to implement for people with disabilities, building Proclamation, No. 624/2009, provides for accessibility in the design and construction of any building including latrine to ensure suitability for disabled persons (24).

The study conducted on Butajira, Ethiopia indicates that even though 50% of PwPDs have any type of latrine but because of inappropriate designs they cannot access them (25).

The study done in Gondar, Ethiopia indicates persons with physical disabilities that had latrine with recommended distance were 61.6 times more likely accessible to latrine than those latrine with greater than recommended distance and Those with safe path to latrine were 52.5 times more likely accessible to latrine than the walkway to latrine didn't allow mobility assistance distance present with steps, rough surface and difficulty in topography (12).

According to the study in Bahir Dar, Ethiopia regarding the latrine access and utilization among people with physical disability, Only 142 (34 %) participants (PwPD) had accessible latrine and another study conducted on Gondar shows 72% of physically disabled people had latrine but only 29.2% of physically disabled people were accessed to latrine (8, 12).

2.2 Factors Associated with Latrine Access to PwPDs

2.2.1 Socio-Demographic and Economic Factors

Cross- sectional study conducted in Bangladesh, Cameroon, India and Malawi shows that sex and age of PwDs have an association with the accessibility of inclusive latrine. 51% and 55% of females in Cameroon and India respectively were found to be with inaccessible latrine. On the other hand in Malawi 52% males with disability had not accessible latrine. In Cameroon 40.7% of PwDs in both age groups of 5-17 and greater or equal to fifty years had not accessible latrine which can prevent them from contact of faces, in India 35% PwDs with the age of 18-49 and 52% of age greater or equal to 50 years were with inaccessible latrine and in Malawi 59% of people with disability whose age was greater or equal to 50 had inaccessible latrine. Whereas the study conducted in Nepal states that higher sanitation scores were significantly and positively linked to PwPDs belonging to the 30–45 and 75+ year old age brackets (7, 19).

Affordability of latrine access does not necessarily require services to be provided free of charge. When people are unable, for reasons beyond their control, to gain access to latrine through their own means, the State is obliged to find solutions for ensuring this access. The solutions could be inclusion of latrine services in social safety nets, microcredit programmes or revolving funds to help them afford the service (26).

Worldwide poorest population group is 16 more likely (63%) than the wealthiest (4%) to practice open defecation. The results of qualitative study in Malawi indicate that disabled people who appeared less poor (based on observed assets and housing) were found to have better WASH access. The study also shows positive relations between educational status and WASH access. In Philippines and Bangladesh, the levels of unmet needs of WASH by disabled people were found to be strongly associated with household poverty and as the study in Nepal with poorest socioeconomic quartile (3, 10, 19).

Between 40 and 90 percent of disabled people around the world are living in poverty, unable to benefit from their socio-economic rights. Disability is both a cause and consequence of poverty. People with disabilities are significantly under employed and

live in poverty. Due to this most of them had lower income with lower ability to pay for accessible improved sanitation (11, 27-29).

The study conducted in Gondar shows person with physical disability whose educational status was certificate and above were 3.3 (AOR=3.312,95% CI (1.114-9.849) times more likely accessible to latrine than persons who couldn't read and write (12).

2.2.2 Institutional Factors

Institutional barriers are among the biggest factors to disability non inclusive WASH services that often stem from a lack of awareness of the rights of people with disabilities. Many people with physical disabilities are excluded from decision-making in matters directly affecting their lives including their latrine desire and needs. A lack of rigorous and comparable information on disability and evidence on programmes and services could impede understanding and action(2, 30).

The study conducted in Gondar, Ethiopia indicates those persons with physical disabilities that had government consideration on accessible design option were 3.4 times more likely accessible to latrine as compared with those who had not government consideration, those who got government consultation about sanitation services were 2 times more likely accessible to latrine than those who didn't get government consultation (12).

2.2.3 Social/Attitudinal Factors

Among the main success factors for inclusive WASH by UNICEF addressing stigma was sit on the top level and expressed as 'the prevalence of stigma associated with disability, has been cited over and over as the fundamental barrier to inclusive and accessible WASH'(30).

The most extreme forms of discrimination occur to access latrine. Surprisingly, people experience discrimination in private as well as rented accommodation, and from close family members as well as from neighbor. PwDs are more often marginalized because they are believed to be incapable, useless and dependent.(31)

According to the United Nations Committee on Social, Economic and Cultural Right 45th session statement "States must ensure that everyone, without discrimination, has physical and affordable access to sanitation in all spheres of life, which is safe, hygienic, secure, socially and culturally acceptable, provides privacy and ensures dignity"(32).

According to the results of qualitative study conducted in Addis Ababa and Butajira Ethiopia, discrimination of PwDs was common in WASH services and the most extreme forms of discrimination occur in latrine access because they takes longer time to use it (31).

2. 3 Conceptual Framework

The possible factors which may influence the access of latrine for PwPDs are socio demographic, institutional and social factors.

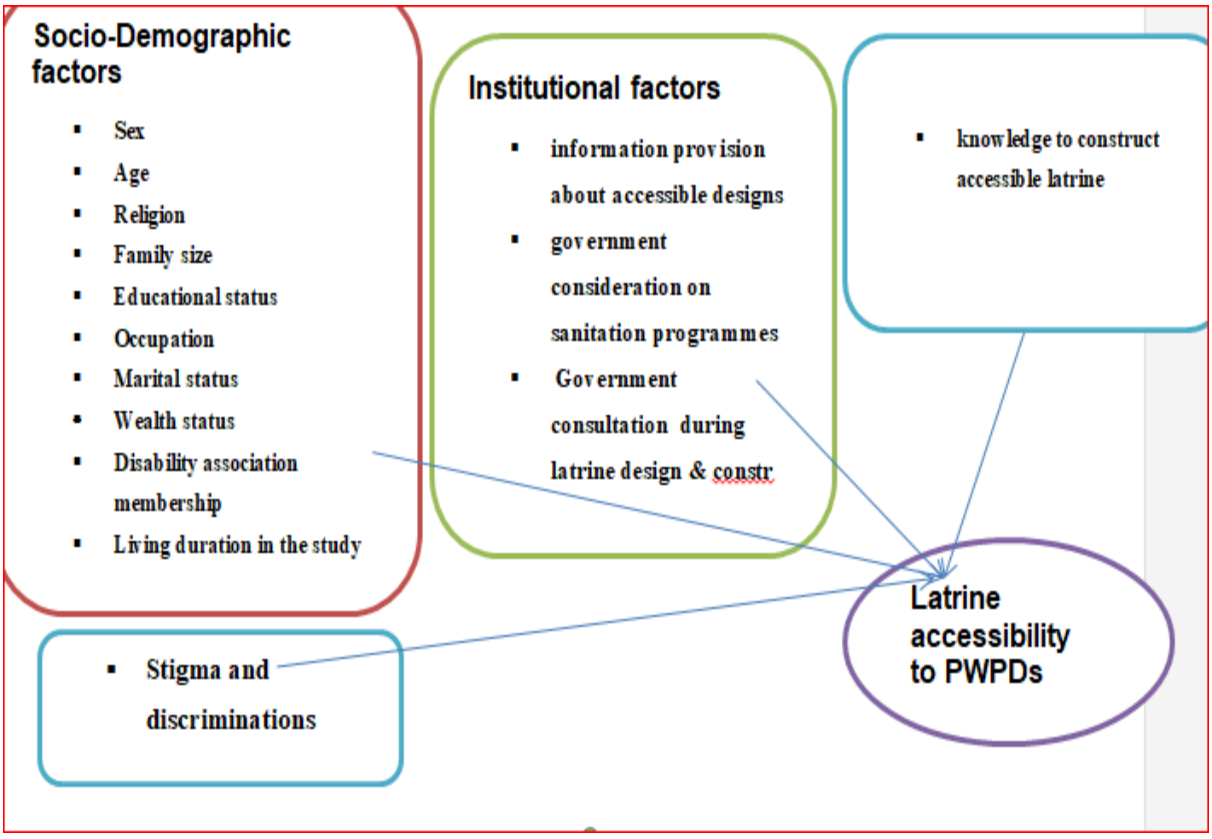

Figure 1 conceptual framework developed from literatures (8, 12, 33-36)

3. OBJECTIVE

3.1 General Objective

- The General objective of this study was to determine latrine access and identify factors associated among physically disabled people in kombolcha town, Amhara region, Ethiopia.

3.2 Specific Objectives

- To determine the prevalence of latrine accessibility among physically disabled people in kombolcha town, Amhara region, Ethiopia.
- To identify factors associated with latrine access among physically disabled people in kombolcha town, Amhara region, Ethiopia.
- To explore the barriers associated with latrine access among physically disabled people in kombolcha town, Amhara region, Ethiopia.

4. METHODS AND MATERIALS

4.1 Study Area

The study was conducted in Kombolcha town, Amhara regional state. According to Kombolcha town administration office report Kombolcha town is one of industrial town in Ethiopia located at coordinates of, 11° 5' 0" North, 39° 44' 0" East .The town is found at 378.5 kms to North East direction of Addis Ababa and 503 kms south east from Bahirdar. The town has 12 kebele administrative. Based on 2019/20 projection of 2007 census report data it have an estimated total population of 156,138 of which 78,849 are females and 77,289 are males; 122,636 or 78.5% of population were urban dwellers. The report from Kombolcha town labor and social affairs office shows there are 1224 people whose age is greater than 18 years and with some form of disability, out of them 748 of them is people with physical disabilities (37, 38).

4.2 Study Design and Period

Community based cross-sectional study, employing both quantitative and qualitative methods were conducted from April one to April 20/2020.

4.3 Source Population and Study Population

All people living with physical disabilities in Kombolcha town.

4.4 Eligibility Criteria

Inclusion Criteria

In this study all PwPDs who live at least six months in the town and whose age is greater or equal to eighteen years were included.

Exclusion Criteria

Those people living with physical disability that was severely ill during data collection were excluded.

4.5 Variables

Dependent Variable

- latrine access among people with physical disability (accessible or not accessible)

Independent Variables

- **Socio-demographic and economic factors**: Age, sex, marital status, religion, wealth status, education level, occupation and living duration in the study area.
- **Social /attitudinal factors**: stigma and discrimination to get and use latrine in the last 12 months
- **Institutional factors:** information provision about accessible latrine in the last 12 months, government consideration and consultation during latrine designs.
- Knowledge to construct accessible latrine

4.6 Operational Definitions

People with Physical disabilities

They are population groups for whatever reason cannot walk and may use a wheelchair, trolley, other mobility device OR Can walk with difficulty and need support from e.g. crutches, hand rail, another person to lean on OR Can walk, but experience other physical weakness or lack of coordination, such as weak or erratic grip, or limited arm/hand movements.(16)

Improved latrine: facilities are those designed to hygienically separate excreta from human contact (39).

Good latrine entrance: wide enough and level enough (minimal or no difference between outside and inside) (40).

Hand rail: a support to the person with disability to hold and move forward along a ramp or stair and even along a straight pathway (40).

Grab bar: supportive bars so that persons with disability can transfer their body weight for movement **(40).**

Shared latrine: a latrine which is used by two and more households in common.(39)

Latrine access to PwPDs: is access of latrine which is at least improved type and permits the possibility to reach, enter and use without any difficulty. Measured by Level

and marked paths (≤ 6m) from the household, wide entrances to toilets (≥=1m), Enough space inside for a person and her/his career to turn inside (≥ $1m^2$), Handrails and grab bar (12, 41).

Knowledge on accessible latrine construction: This variable was measures using nine items. So that, above the mean score reflect **good knowledge** and below the mean score reflect **poor knowledge** (36) .

4.7 Sample Size Determination

Quantitative Study

Sample size for the first objective was determined using single population proportion formula with an assumption of 95% confidence interval, margin of error (5 %) and proportion of PwPD with accessible latrine was found to be, p= 34% taken from study done in Bahirdar, Ethiopia (8).

$n = (Z_{\alpha/2})^2 p (1-p)/d^2$

$= (1.96)^2(0.34)(0.66)/ (0.05)^2 = 345$

Where; n is the required minimum sample size, Z=critical value for normal distribution at 95% confidence level which is equal to 1.96 (z value at $\alpha = 0.05$) P= (Proportion of PWPD with accessible toilet) and d is margin of error.by adding 10% non-response rate gives sample size of **380.**

Sample size for the second objectives was calculated using Epi- info version 7.2.0.1 as shown below in the table based on the relevant factors (educational status and latrine distance from home) from the study conducted in Gondar town (12).

Table 1: sample size determination based on perspective assumptions for objective two using Epi-info version 7.2.0.1

Relevant factors	Power	95%CI	P_1	P_2	P_2-P_1	r	n_1	n_{total}
educational status	80%	3.312(1.114-9.849	35.4%	64.5%	29.1%	1:1	114	**126**
latrine distance from home	80%	4.125(3.854-11.86)	26.3%	59.5%	33.2%	1:1	108	**119**

Where p1=the proportion of latrine inaccessibility among non-exposed

p2= the proportion of latrine inaccessibility among exposed

r=the ratio between non-exposed and exposed

n_1=sample size before addition of non-response rate

n_{total} = sample size after addition of non-response rate

Based on the above assumptions the sample size calculated by taking relevant factors for the second objective were 126 &119 including 10% non-response rate. Hence the maximum sample size was decided to be **380.**

Qualitative study

A total of 16 Interviewee were purposely selected. 12 were from influential PwPDs and 4 were Key Informant Interviewee (hygiene and sanitation officer of the town, WASH coordinator of the town, disable people association head and town municipality sanitation focal).

4.8 Sampling Procedures

Quantitative study

About 748 PwPD were legally registered under kombolcha town labor and social affairs office, this study used the registration of them (1-748) as a frame to select study units. Computerized Lottery method was applied to select study subjects.

Qualitative study

Purposive sampling method was applied to select participants for KIIs and IDIs.

4.9 Data Collection

Quantitative Study

Structured interviewer administered questionnaire were used. Socio demographic characteristics, latrine access related and questions regarding the contributing factors were included. First, questionnaire was prepared in English then it translated to Amharic (local languages) and then retranslates to English to check for consistency. Six health extension workers were assigned for data collection on each kebele (one per two kebeles). Data was collected for twenty days based on house number of selected physically disabled participant. Supervision during data collection was done by two (BSc) environmental health professionals. Filled questionnaires were checked daily bases for completeness, legibility and consistency. Continuous follow-up and supervision was also conducted by principal investigator throughout the data collection period.

Qualitative Study

The qualitative data were obtained through KIIs and IDIs which were conducted by two environmental health experts who had an experience of qualitative data facilitation. Open ended non directive guide questions adapted from different literatures were used.(3, 20, 22)

Data was collected for a maximum 30 minutes in each in-depth interview and key informant interview and it was conducted until no new information raised and redundancies of ideas are recognized. All conversations during IDIs were recorded and documented using audio recorder and note books throughout the event.

4.10 Data Quality Management

Quantitative Study

Data quality assurance was in place during questionnaire designing, data collection, entry and analysis. The questionnaires were objective based, logically sequenced and free of scientific terms. The questionnaire was pretested before the actual data collection for clarity, flow, cultural, moral fitness and time requirement by taking 15 PwPDs living in Dessie town.

Training was given to data collectors and supervisors on each data elements. The consistency and completeness of the data was checked on daily bases by supervisors and supervision will be undertaken with two days by principal investigator.

The data was entered to Epi data version 3.1 to minimize errors during data entry then sorted and cleaned with SPSS software version 23.

Qualitative Study

The topic guides were originally prepared in English and then translated to Amharic back to English to ensure reliability of information. KIIs and IDIs were conducted where on the places which participants were choose for their freedom and increased confidence.

4.11 Data Analysis

Quantitative Study

The collected data was checked for completeness, edited, coded and entered into Epi-Data-version 3.1 and then exported into SPSS version 23.0 for analysis. After cleaning the data for internal consistency, descriptive statistics like frequencies and percentages were calculated to see the overall distribution of the study subjects with regard to the variables under the study. Bivariate logistic regression was conducted to assess the crude association and to select important variables to be included in the final model. Finally, multivariable-binary logistic regressions was to control possible confounders and identify factors associated with the access of latrine for PwPDs .Adjusted odds ratio (AOR) and their 95% CI are calculated to measure the association. A significance level of 0.05 was used to decide the significance of statistical tests.

Qualitative Study

Qualitative data was analyzed thematically through repeat reading and hearing the view of respondents then generalized themes were developed and coded. After that all data were included under the coded themes based on their similarities

4.12 Ethical Consideration

Ethical clearance letter was obtained from Ethical Review Board (ERB) of Bahirdar University College of Medicine and Health Sciences. Support letter was obtained from the disability associations to be more formal and legal. The respondents were informed about the purpose of the study, and their verbal consent was obtained. The respondents' right to refuse or withdraw from participating in the study was fully maintained and the information provided by each respondent will be kept strictly confidential using codes.

6. RESULTS

6.1 Socio-Demographic and Economic Characteristics

A total of 380 study participants were included with a response rate of 374(98.4%) and 185(49.5%) were member of disability association. The mean age of study participants were 33 (±11) years. The majority 197(52.7%) of the respondents were females, single 170 (45.5%) in marital status, Orthodox in religion 152 (40%), high school in level of education 120 (32%), and 205(54.8%) in the poor wealth Quintile. The majority one hundred frothy two (38%) were Students, 250 (66.8%) live ≤10 years in the study area and 329(88%) has less than five family size.

Table 2 socio-demographic and economic characteristics of study participants in Kombolcha town April, 2020 (n=374).

Characteristics	Frequency	Percent
Sex		
Male	177	47.3
Female	197	52.7
Family size		
< 5	329	88
≥ 5	45	12
Marital status		
Single	170	45.5
Married	161	43
widowed	35	9.4
divorced	8	2. 1
Occupation		
Gov't employ	80	21.4
Merchant	64	17.1
farmer	20	5.3
Student	142	38
private employ	48	12.8
others	20	5.3
Educational status		
Can't read and write	106	28.3
1-8	85	22.7
9-12	119	31.8
Certificate and above	64	17.1
Wealth status		
Poor	145	38.8
Medium	125	33.4
Rich	104	27.8

Other occupations; beggar (8), deacon &priest (9), peddler (3)

6.2. Prevalence of Accessible Latrine to PwPDs

Table 3: latrine accessibility among PwPDs in Kombolcha town, April 2020

Characteristics	frequency	Percent
Latrine accessibility (n=374)		
no	291	78
yes	83	22
Latrine availability (n=374)		
no	143	38.2
yes	231	61.8
latrine Owner (n=231)		
private	123	53.2
Public/shared	108	46.8
Latrine distance from home (n=231)		
≤6 meters	140	60.6
> 6 meters	91	39.4
Entrance width(n=231)		
<1 meter	115	49.8
≥1 meter	116	50.2
Space area of latrine(n=231)		
< 1 meter squire	106	45.9
≥1meter squire	125	54.1
without contact with faces (n=231)		
no	87	37.7
yes	144	62.3
Latrine have handrail?(n=231)		
no	127	55
yes	104	45
Latrine have grab bar(n=231)		
no	115	49.8
yes	116	50.2

The overall prevalence of accessible latrine among PwPDs in Kombolcha town was found to be 83(22%) with 95% CI (17.7-26.5). Among 374 study participants only 231(61.8%) had any type latrine, of which 99(43%) were shared, 96 (41.5%) were unimproved type, 91(39%) had more than six meter paths from home, 115(50%) had less than one meter wide entrance and 106(46%) had less than one meter squire internal space, 127(55%) had no handrail and 115(50%) had no grab bar. Among study participants living without accessible latrine 143 (49%) were defecate openly.

6.3 Distribution of Social and Institutional Characteristics

Among 374 study participants 192(51.3%) face any form of stigma and discrimination to get latrine in last 12 months. Majority of participants 213(57%) didn't get information regarding latrine accessibility in the last 12 months, 242 (64.7%) had not consulted by the gov't during latrine design and construction, 222 (59.4%) had not considered by the gov't during latrine design and construction and 21(56.4%) had poor knowledge about accessible latrine construction.

6.4 Factors Associated With Latrine Accessibility for PwPDs

In binary logistic regression among sixteen variables study participant's sex, age, wealth status, educational level, disability association membership, stigma and discrimination to get and use latrine in the last 12 months, latrine accessibility information in the last 12 month, government consult during latrine design and construction, government consideration during latrine design and construction and knowledge of study participant to construct accessible latrine were selected as candidates for further multi-variable analysis.at "p" value less than 0.2.

In multivariable logistic regression disability association membership, stigma &discrimination to get and use latrine in the last 12 months, knowledge of study participant to construct accessible latrine and wealth status of study participant were significantly associated with the accessibility of latrine for PWPDs with 'p' value less than 0.05.

People living with physical disabilities which are at rich wealth quintile were 4 times more likely to have accessible latrine (AOR=4.169, 95% CI (1.96-8.864)) than those which are at poor wealth quintile.

Similarly people living with physical disabilities which are at medium wealth quintile were 4 times more likely to have accessible latrine (AOR=4.213, 95% CI (2.017-8.800)) than those which are at poor wealth quintile.

PwPDs who had a membership with disability association had 2 times more likely to have accessible latrine (AOR=2.162, 95% CI (1.231-3.799)) than those who had not membership.

PwPDs did face some form of stigma and discrimination to get or use latrine in the last 12 months were 79% more risk of not having accessible latrine (AOR=0.212, 95% CI (0.116-0.388)) than their counter parts. The result was supported qualitatively that 10 out of 12 in-depth interviewee shows that the stigma and discrimination to get and use latrine is common challenge on day to day bases and it was higher when they try to get the latrine in public areas and institutions. The main forms of stigma and discrimination were lack of interest to use the latrine after physically disabled people used embarrassments to get latrine and locking the latrine.

PwPDs who had good knowledge to construct accessible latrine were 4 times more likely to have accessible latrine (AOR=*4.389,* 95% CI *(2.446-7.87))* than those who had poor knowledge.

Table 4: binary and multi variable logistic regression on factors associated with latrine accessibility among PwPDs in Kombolcha town April, 2020 (n=374)

characteristics	**category**	**latrine accessibility**		**Odds ratio (OR),95%**	
		Accessible (%)	Inaccessible (%)	Crude (‘*P*’=0.2)	Adjusted(‘*P’*=0.05)
sex	male	47(12.6)	130(34.8)	1.617[0.989-2.644]	1.336[0.755-2.366]
	female	36(9.6)	161(48)	1	1
Age	18-30	26(7)	113(30.2)	0.5[0.257-0.998]	0.468[0.205-1.066]
	31-43	27(7.2)	104(27.8)	0.57[0.29-1.124]	0.485[0.210-1.123]
	44-56	10(2.7)	30(8)	0.733[0.301-1.785]	0.548[0.185-1.625]
	≥ 57	20(5.3)	44(11.8)	1	1
Wealth status	poor	14(3.7)	131(35)	1	1
	medium	37(9.9)	88(23.5)	3.934[2.010-7.702]	4.213[2.017-8.800]
	Rich	32(8.6)	72(19.3)	4.159[2.084-8.297]	***4.169[1.96-8.864]***
educational level	Cannot read and write	18(4.8)	88(23.5)	1	1
	1-8	18(4.8)	67(18)	1.313[0.635-2.716]	0.990[0.420-2.333]
	9-12	31(8.3)	88(23.5)	1.722[0.898-3.304]	1.644[0.759-3.559]
	Certificate and above	16(4.3)	48(12.8)	1.63[0.762-3.484]	1.156[0.464-2.880]
disability association membership					
	no	36(9.6)	181(48.4)	1	1
	yes	47(12.6)	110(29.4)	2.148[1.313-3.523]	***2.162[1.231-3.799]***
stigma &discriminations					
	no	62(16.6)	120(32)	1	***1***
	yes	21(5.6)	171(45.7)	0.238[0.138-0.411]	***0.212[0.116-0.388]***
latrine accessibility information					
	no	42(11.2)	171(45.7)	1	1
	yes	41(11)	120(32.1)	1.391[0.853-2.27]	1.239[0.697-2.205]
gov't consult in latrine design					
	no	49(13)	193(51.6)	1	1
	yes	34(9)	98(26.2)	1.367[0.828-2.254]	1.487[0.831-2.661]
gov't consider in sanitation program					
	no	39(10.4)	183(48.9)	1	1
	yes	44(11.8)	108(28.9)	1.912[1.168-3.128]	1.396[0.785-2.480]
latrine construction k/ge					
	poor	23(6)	188(50.3)	1	**1**
	good	60(16)	103(27.5)	4.762[2.782-8.149]	***4.389[2.446-7.87]***

6.5 Qualitative Result

Summary of In-Depth Interviews

A total of four (4) themes were identified from in depth-interview data to explore the barriers of latrine accessibility among PwPDs qualitatively.

Theme 1: Stigma and Discrimination; Out of total in-depth interviewee 10 of them had similar ideas regarding stigma and discrimination to get latrine. They said that "*It was common in the community starting from their own families"*. A 22 year old woman said that *"I am moving with wheelchair and living with my uncle's family. The latrine has higher steps which inhibits me to enter with my wheelchair.it is also difficult to get the latrine at day time because they always ordered me to go to latrine only at night after all family members used".*

Theme 2: Wealth Status; ten out of twelve in-depth interview participants' show that they were living with lower hand to mouth daily income sub standardly**.** They hadn't had extra money to save for such like needs**.** Even sometimes some of them might miss their normal lunch or dinner. A 26 year old woman said "*If I am rich I will modify my latrine first"*

Theme 3: Shared/Public Latrines; all the interviewee agreed that public/shared latrines were challenges for them related with lack of freedom and cleanliness. A 22 year old girl high school student said "*I used a public latrine with our neighbors. The latrine is very dirty especially in afternoon and at night. I had no freedom to use it at day time.my hands, legs and cloths had contact with dirty matter many times".*

Theme 4: Lack Of Own House; fifty percent of interviewee in in-depth interview shows they were living in small rented house. They couldn't do any adjustments on their living environments including their living class. Even they couldn't find out the renting house with such like infrastructure purposely designed to include them. A 38 year old man who move with the help of his knee and arm said "*I was live here in this town for more than 10 years. And I was change my rental house more than six times.it was impossible to*

found out the latrine accessible to me. I usually defecate in ditches and sometimes open field. Now I choose to rent on ending of the town to get free space easily."

Summary of Key Informant Interview

A total of three themes were identified on key informant interview.

Theme 1: Wealth Status; all the KI interviewee had similar view that PwPDs are poor people with few exceptional. According to the town municipality office sanitation focal and health office sanitation officer expression "*we know they are among the poorest people in the town which needs special treatment in all aspects including their latrine access".*

Theme 2: Stigma And Discriminations; All KII participants had assured that PwPDs have facing different types of stigma and discrimination to get latrine access. The heads of town disability association display that "*stigma and decimation of PwPDs to get a latrine were common and the problem is higher in households which have communal/shred latrine".*

Theme 3: Lack of Information Provision Regarding Accessible Latrines;

All key informant interview participants agreed that technical support and information provision about accessible latrine designs to PwPDs was null and not evaluated well. But the town health office sanitation officer said that *"no one in gov't sides including our office have told them how they can modify and make their latrine accessible".*

7. DISSCUSSION

This study revealed that only 22% of participants had accessible latrine. This prevalence is consistent with study conducted in India (26%) and Malawi (24%)(7). It was lower than the United Nations development report on developing nations which states 20% of disabled people had not accessible latrine and out of 45000 latrines 31% were not accessible to wheelchair users (17). This difference in result might be due to the differences of latrine access measuring indicator. It is also somewhat lower than the results of previous similar studies conducted in Ethiopia, Gondar (29%) and Bahirdar (34%) (8, 12) and it might be due to differences in socio-demographic characteristics like educational status occupation and income levels .whereas it is higher than the results of other Indian study, only (10%) of PWPDs had accessible latrine (1).This deviation of results might be because of differences in socio-demographic characteristics of PwPDs

SDG was ratified to practice "leave no one behind" principle for all developmental goals, specifically SDG 6 reflects on universal WASH access. Vulnerable population groups like people with physical disabilities were stated to gain special treatments (9). However results of this study indicates that people with physical disabilities are under multiple challenges to meet their latrine needs particularly the need of short distance of latrine from home, wide latrine entrance and spacious enough latrine, use of latrine without contact with dirt and faces, build their own private latrines and latrines with handrails and grab bars.

This lower prevalence accessible latrine to PwPDs might be due to most of the existing latrines were traditional type, some were at longer distance from home, with rough paths, narrow entrances ,narrow space inside, steps to latrines, slippery and absence of grab bars and hand rail (23).

Another possible explanation might be due to physically disabled people are poor with high unemployment rate, so that they cannot afford basic services including their sanitation needs (17, 21).

PwPDs who are at poor wealth quintile had more risk to have inaccessible latrine than their rich wealth quintile counterparts. The finding was supported qualitatively that in-

depth interview participants outlined their poorness inhibit them not to modify and make latrine accessible. The result was also supported by the study conducted in Nepal that poorest disabled people experience higher challenges in sanitation than those disabled people with good economic status and the review conducted on low and middle income countries which shows PwDs in poorest quintile had more chance than the wealthiest quintile to practice open defecation. (3, 19, 42).

The possible rational behind this might be due to poor PwPDs have not enough money to pay for personal costs and the resources needed to construct improved accessible latrine (42).according to Basic Need Approach(BNA), absolute measurement of poverty, basic needs are not only the traditional (food, cloth and shelter) but also sanitation and education and health. Poor people are those whose income is below poverty line (fulfilling the above basic needs) (43).

It might be also due to the reason that poor people did not have their own house and cannot construct and modify the latrines as they want without the interest of the renter.(35).lack of own house was also identified by the qualitative part of the current study as the main constraints of PwPDs to have accessible latrine.

PwPDs who had not a membership with disability association had more risk to be inaccessible to latrine than those who had membership. The summery of both in-depth and key informant interviews in the current study has similar reflections with this result. This result also supported by the study conducted in Gondar, Ethiopia that shows PwPDs who had membership with disability association more likely to have accessible latrine than those who had not disability association membership (12).

It might be due to disability associations had struggle on the right of members including in latrine accessibilities. The other possible explanation can be PwPDs who had membership to the association had an opportunity to gain information regarding latrine accessibility (44).

PwPDs didn't face some form of stigma and discrimination to get latrine in the last 12 months had less risk of having inaccessible latrine than who did face. This result was supported by qualitative parts of this study and finding of other review conducted on low

and middle income countries that displays people with physical and other disabilities may tend to take longer times to use latrine and stigmatizing experiences especially in communal latrines. This pushes them to practice stigma associated open defecation (3, 24).

The possible explanation might be due to people which are discriminated and excluded had less chance to decide on their needs.(35) And hence they cannot modify or arrange the physical environments of latrine as they wants.

It might be also due to the reason that mostly discriminated people are hidden inside home by their families to keep name and position of family and they are dependent on others so that impossible to influence towards their demand. Everything could be done by the volition of others.(45)

PwPDs who had poor knowledge to construct accessible latrine were more likely to have inaccessible latrine than those who had good knowledge. In key in-depth interview of this study, participants outlined that lack of information provision on accessible latrine designs were identified as one of the main barrier to have and get accessible latrine.

Even though limitation of both qualitative and quantities reports to compare this finding, but this might be due to those PwPDs who had active involvement in various issues the community had an exposure and chance of gaining multiple skills needs for their day to day bases.(35)

8. STRENGTH AND LIMITATIONS OF THE STUDY

8.1 Strengths

In quantitate part the sample was directly derived from the source population and to maintain the sample size adequate enough this study didn't use correction formula by considering less than ten thousand population, this might the study more representative.

In this study variables which never been investigated previously like Wealth status, accessible latrine construction knowledge were included and evaluated well.

Qualitatively in-depth and key informant interviews which had not consolidated by previous studies were undertaken.

8.2 Limitations

The study was considering the latrine accessibility issues of PwPDs at household level; it had limited to address their latrine access challenges at different public areas and institutions.

Some respondents were resisting being audio recorded. In this case, the interview was conducted with note taking. This might have resulted in missing or omission of some important points.

9. CONCLUSSIONS

In this study latrine access among people living with physical disabilities was found to be very lowe~~r~~. Disability association membership, wealth status of study participants, stigma and discriminations to get and use latrine in the last 12 months and knowledge to construct accessible latrine were predictors of latrine accessibility for PwPDs. In qualitative study stigma and discrimination to get latrine, poor wealth status of PwPDs, shared/public latrine, homelessness and lack of information provision regarding latrine accessibility were identified as a barrier to latrine accessibility among PwPDs in Kombolcha town.

10. RECOMMENDATIONS

1. The disability association is better to integrate with gov't sectors to create awareness about the special latrine needs of PwPDs and so as to minimize stigma and discrimination in the community.
2. Town entrepreneur office is better to develop PwPD's income through participating them different income generating activities up to their maximum ability.
3. PwPDs are better to be the member of their associations and actively participate on public spheres.
4. Minister of health, Regional health bureau and zonal health departments are better to increase the knowledge of PwPDs on accessible latrine construction through trainings and key messages via different Medias.
   - **Research gap:** further researchers are better to investigate the latrine access among PwPDs in rural districts or comparative study with urban areas.

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ANNEXES

Annex I English Version Consent Form to Quantitative Part

Good morning/good afternoon, my name is ----------I am a research team member. The research is undertaken for the partial fulfillment to degree of Masters of Public Health in Water, Sanitation and Hygiene (WASH).program. I would like to thank you for taking time to talk with me today.

The study is aimed to determine the latrine access and identify factors associated among physically disabled people in kombolcha town.

You are selected to participate in the study randomly by chance. The information you give us will help to design latrine access intervention strategies among physically disabled people the study will be conducted through interview. The interview will take approximately 10 to 15 minutes up to completion. If you choose to participate, the information you give us will only use for this study purpose. You will completely confidential and any personal identification will not be used. All of your answers will be respected, you have a full right to participate throughout, or to discontinue at any time, or never participate in the study. However, your honest answers to these questions will help us to achieve the objective of the study. Are you willing to participate in the study?

Yes [ ] continue No [ ] thank and stop here

Name of data collector_____signature_____

Name of supervisor_____signature_____

Annex II English Version Participant Questionnaire

Latrine access and factors associated with it among people with physical disabilities in Kombolcha town, Ethiopia, 2020.

Questionnaire code_____

Date of data collection_____

Part one: socio demographic characteristics		
S.no	Questions	answer
101	What is the Sex?	1 Male 2 Female
102	What is your age in year?	_____
103	What is your religion?	1 Orthodox 2 Muslim 3 Protestant 4 Other (specify
104	Family size	--------
105	How long do you live in this town in year?	----------
106	What is your current marital status?	1 Single 2 Married 3 Divorced 4 Widowed
107	Occupation/job of study participants	1 Government employ 2 Merchant 3 Farmer 4 Student 5 Private employ 6 House wife 7 Daily labor 8 Other specify

108	Educational status	1 Cannot read and write 2 Primary(1-8) 3 Secondary(9-12) 4 Certificate and above
109	Are you the member of disability association?	1= no 2= yes

PART 2: **Wealth Index Assessment Questionnaire**

S.no	Questions	Response
201	Where do you live?	1. Own house 2. Rented house
202	Number of rooms in the dwelling place	_____
203	What is the wall of the house made off? (check by observation)	1. Wood but not have mud 2. Wood with mud 3. Mud only 4. Wood and cement 5. Blocket 6. Others specify_____
204	Observe that which material the house roof is made off?	1. Grass/ leaf 2. corrugated iron
205	What is the floor of the house made off?(check by observation)	1. Natural ground 2. Muck/smooth by cow's faces 3. Wood

		4. Cement
206	What is your main source of cooking fuel?	1. Firewood /Animal dung 2. Charcoal 3. Electricity 4. Kerosene/gas
207	What is the main source of lighting?	1.Kerosene 2. Electricity 3.Solar 4.Candle
208	Radio	1 No 2 yes
209	Television	1 No 2 yes
210	Fridge	1 No 2 yes
211	Chair	1 No 2 yes
212	Table	1 No 2 yes
213	Bed and mattress which made from cotton spring	1 No 2 yes
214	Mobile	1 No 2 yes
215	Cycle	1 No 2 yes
216	Motor cycle	1 No 2 yes
217	Horse's cart	1 No

		2 yes
218	Bajaj/car	Yes No
219	Bank book	Yes No
220	Sofa	Yes No

Part 3 Latrine Accessibility Related Questions

301	Does the household have latrine?	1=no 2=yes
302	If" yes' for Q No 301 who is the owner of it?	1= private 2=public/shared
303	If "yes" for Q No 301 do you use the same latrine as other member of your household?	1=no 2=yes
304	If" no" to question 303, where do you use latrine?	1= pour flush 2= improved pit 3=unimproved pit 4=0pen field/bush
305	How far does the latrine from house	1 = equal or < 6meters 2 = >6 meters
306	How wide is the entrance of the latrine?	1= less than 1 meter 2= equal or more than 1 meter
307	How much spacious the latrine room?	1= $<1m^2$ 2= equal or > $1m^2$
308	Does the latrine enable you to use it without assistance from other	1=no 2=yes

	person?	
309	Does the latrine facility enable you to use it without coming into contact with faeces or urine?	1=no 2=yes
310	Does the latrine have handrail?	1=no 2=yes
311	Does the latrine have grab bar?	1=no 2=yes
312	Does the latrine accessible for PWPDs?	1=No 2=yes [fill after data collection]
313	Type of accessible latrine	1=improved pour flush 2=ventilated improved pit latrine
314	Are you facing any stigma and discrimination in access of latrine in the last 12 months?	1=no 2=yes
315	Did you get information about accessible latrine to you In the past 12 months	1=no 2=yes
315	gov't consult of PWPDs during latrine design and construction	1=no 2=yes
316	government consideration of PWPDs on sanitation programs	1=no 2=yes

Part 4 Accessible Latrine Construction Knowledge Related Questions.

401	Have you ever heard about the construction of accessible latrine designs for PwPDs?	0=no 1=yes
402	If yes for Question yes 401 From where did you hear about it?	1. Mass media 2.Health workers 3.NGOs workers 4.Relatives/family 5.Friends 6.diaablity associations 88. Other (specify
403	Do you know the construction of accessible latrine designs for PwPDs?	0=no 1=yes
404	Which latrine modifications did you know to make latrine accessible for PwPDs?	1.road to latrine 2. steps 3.entrance width 4. grabs 5..handrails 6.internal space 88. Other (specify
405	Shared latrines cannot be accessible for PWPDS?	0=no 1=yes
406	The distance from house to latrine should not be more than 6meters for PWPDS.	0=no 1=yes
407	The handrails should be installed to latrines for PWPDS.	0=no 1=yes
408	The grab bar should be installed to latrines for PWPDS.	
409	The entrance of the latrine should not be less than one meter wide for PWPDS.	0=no 1=yes
410	The minimum internal space of the latrine for PWPDS should not be less than one squire meter	0=no 1 yes
411	Latrine for PWPDs needs somewhat little amendments than general population	0=no 1=yes

Annex III English version Verbal Consent Form for IDI &KII participants

(To be read to the key informants and in-depth interviewee)

My name is _____. I am a research team member in Bahirdar University College of medicine and health science.

The Title of the study is latrine access and factors associated with it among people with physical disabilities in Kombolcha town.

The Purpose of the study is to assess the latrine access and identify factors associated with it among people with physical disabilities in the study area.

You were selected purposely to participate in qualitative part of the study as the village leaders and the principal investigator thinking that you represent PWPDs and you could reflect the barriers of PWPDs to get accessible latrine. The information you give us will help to design latrine access intervention strategies among physically disabled people

The study will be conducted through open interview and discussion. The discussion will take approximately 30 minutes up to completion. Your participation in this study is completely based on your will and there is no penalty for refusing to take part. All the information collected from you will be kept confidential. The recorded voice will be erased after transcribing the information and your name will never be used in connection with any information you provide in the results of this research.

You have a full right to participate throughout, or to discontinue at any time, or never participate in the study. However, your honest answers to these questions will help us to achieve the objective of the study.

Are you willing to participate in the study?

Yes [ ] continue No [ ] thank and stop here

Name of data collector_____signature_____

Name of supervisor_____signature_____

Annex IV English version key informant participant guide

Personal information

Position_____

Profession_____

1. Could you describe what you do in your position has some implications for latrine access to PWPDs? [How?]
2. Do you know whether there are many people in your community with physical disabilities that may limit their access to latrine? How?
3. What are the main barriers of PWPDs to get accessible latrines? [list measuring indicators]
   - How?
   - What is planned to do in the future to alleviate those barriers? how?
4. What sort of work is being done by local officials (government), NGOs, local community groups to ensure accessible latrine to PWPDs at household level?
   - Names of NGOs or specific programmes
   - How do people living with disability normally find out about such programs?
   - What sanitation strategies are being implementing in the town for PWPDs?
5. To what extent do you consider PWPDs in accessing latrine when you implement sanitation programmes? How?
   - Can you give any examples of this?
6. How do you describe stigma and discrimination of PWPDs in your community to access latrine?
   -what is planned to do in the future? How?
7. Do you think different approaches necessary to help PWPDs understand about accessible latrine? , Why?
   - How can this done?
8. How do you express the knowledge of PWPDs about accessible latrine construction?
   - How does information provided to them regarding accessible latrine?
   - What is thinking to improve their knowledge? How?
9. Have you additional comments regarding the issue?

Annex V English version in-depth interview participant guide

Personal information

Sex_____

Age_____

1. Does your family have latrine? (any type)
2. If yes, how do you express its accessibility to you?[list accessible indicators]
3. Describe what do you face when going to get/use latrine?
4. What are the main barriers that inhibit you to get accessible latrine?
   - How? [Describe each]
   - What is your experience? [If remember]
5. In some communities, there are traditional beliefs, especially about PWPDs that make some members of the community avoid them, exclude them or show some uneasiness or discriminate against them to get latrine access. How do you describe this based on your experience?
6. Does your income affect your latrine access based on your scenario? How?
7. How do you describe the information/education related with accessible latrine from somebody gov't side or other NGO?
8. how the gov't consult you when you design and construct latrine?[discuss]
9. If you have additional idea regarding the issue you can rise.

Thank you!!!

Annex VI Amharic version questionnaire
አማርኛ የስምምነት ቅጽ

ደህና አደርክ/ሽ /ዋልክ/ሽ፣እኔ ----------እባላለሁ፡፡በባህርዳር ዩኒቨርሲቲ የጥናት እና ምርምር አባል ስሆን ጥናቱ የሚሰራዉ በዉሃ፣ስነ-ጽዳት እና ስነ-ንጽህና ትምህርት ክፍል ተማሪ አማካንነት ነዉ፡፡ከእኔ ጋር ጊዜዎን ስለሚያሳልፉ አመሰግናለሁ፡፡የጥናቱ አላማ በኮምቦልቻ ከተማ ለአካል ጉዳተኞች የመጸዳጃ ቤት ተደራሽነትን ለማወቅ እና ተያያዥ ሁኔታዎችን ለመለየት ነዉ፡፡እርስዎ በሳይንሳዊ ዘዴ ለዚህ ጥናት የተመረጡ ሲሆን እርስዎ የሚሰጡት መረጃ ለአካል ጉዳተኞች መጸዳጃ በትን ተደራሽ ለማድረግ ስልታዊ እርምጃ ለመዉሰድ ያስችላል፡፡ ጥናቱ የሚካሄደዉ በቃለ መጠይቅ አማካኝነት ሲሆን ቃለ-መጠይቁ ከ 10-15 ደቂቃ ሊወስድ ይችላል፡፡በዚህ ቃለ መጠይቅ እንዲካፈሉ በትህትና እየጠየኩ ፈቃደኛ ከሆኑ የሚሰጡት መረጃ ለጥናቱ አላም ብቻ የሚዉል መሆኑን አረጋግጣለሁ፡፡ የሚሰጡት መረጃ ሚስጢረዊነት ሙሉ በሙሉ የተጠበቀ ሲሆን ማንኛዉም አንተን/ችን የሚገልጽ ጥቅም ላይ አይዉልም፡፡በጥናቱ ያለመካፈል ፣ ማቋረጥ እና መጨረስ በእርዎ የሚወሰን ሲሆን አርስዎ የሚሰጡት ትክክለኛ ምላሽ ግን የጥናቱን አላማ ለማሳካት ወሳኝነት አለዉ፡፡

በጥናቱ ለመካፈል ፈቃደና ነዎት

አዎ [ ] ቀጥል የለም [ ] አመስግነህ አቋርጥ

የመረጃ ሰብሳቢዉ ስም----------ፊርማ----------

የአስተባባሪዉ ስም----------ፊርማ----------

አባሪ ሁለት፡አማርኛ የጥናቱ ተሳታፊ ጥያቄዎች

ለአካል ጉዳተኞች የመጸዳጃ ቤት ተደራሽነት እና ተያያዥ ሁኔታዎች በኮምቦልቻ ከተማ 2012 ዓ.ም

የመጠይቅ መለያ----------

መረጃዉ የተሰበሰበበት ቀን----------

ክፍል፡ እንድ ስነ-ህዝባዊ እና ኢኮኖሚያዊ መረጃ		
ተ.ቁ	**ጥያቄ**	**መልስ**
101	**ጾታ**	1 ወንድ 2 ሴት
102	**እድሜዎ ስንት ነዉ ?**	_____
103	**ሃይማኖትዎ ምንድን ነዉ?**	1 ኦርቶዶክስ 2 ሙስሊም 3 ፕሮቴስታንት 4 ሌላ(ይገለጽ) ----------
104	**በቤት ወስጥ ስንት የቤተሰብ አባል አለ?**	----------
105	**በከተማዉ ዉስጥ ለምን ያህል ጊዜ ኖረዋል(በአመት)?**	----------
106	**የጋብቻ ሁኔታ**	1 ያላገባ/ች 2 ያገባ/ች 3 የፈታ/ች 4 የሞተበት/ባት
107	**ስራዎ ምንድነዉ?**	1 የመንግስት ስራ 2 ነጋዴ 3 ገበሬ 4 ተማሪ 5 የግል ተቀጣሪ 6 የቤት እመቤት 7 የቀን ሰራተኛ 8 ሌላ (ይጠቀስ)
108	**የትምህርት ደረጃ**	1 ማንበብ እና መጻፍ የማይችል 2 የመጀመሪያ ደረጃ(1-8) 3 ሁለተኛ(9-12) 4 ሰርትፍኬት እና ከዚያበላይ
109	**የአካል ጉዳተኞች ማህበር አባል ነህ/ሽ?**	1 የለም 2 አዎ

ክፍል ሁለት ፡- የሀብት መረጃ ጠቋሚ መጠይቅ

ተ.ቁ	መጠይቅ	
201	የምትኖሩበት ከምን አይነት ቤት ውስጥ ነው?	1. ከራሴ ቤት 2. በኪራይ ቤት
202	በመኖሪያ ቤታችሁ ውስጥ ስንት ክፍሎች አሉ?	_____
203	የመኖሪያ ቤታችሁ ግድግዳ ከምንድነው የተሰራው? (በምልከታ ይረጋገጥ)	1. ከእንጨት ሆኖ ጭቃ የሌለው 2. በጭቃና በእንጨት የተሰራ 3. ከጭቃ ብቻ 4. በእንጨትና በሲሚንቶ 5. በብሎኬት
204	የቤቱ ጣሪያ የተሰራበት ቁሳቁስ ምንድነው?	1. ሳር/ቅጠል 2. ቆርቆሮ
205	የቤቱ ወለል ከምን የተሰራ ነው? (በምልከታ ይረጋገጥ)	1. ከአፈር 3. ከእንጨት 2. በእበት የተለቀለቀ 4. ከስሚንቶ_____
206	ለምግብ ማብሰያነት የምትጠቀሙት ምንድነው?	1. እንጨት/ ፍግ 3. ኤሌክትሪክ 2. ከሰል 4. ኬሮሲን ጋዝ
207	የመብራት ዋና ምንጮች ምንድን ናቸው?	1. ጋዝ 3. ሶላር 2. ኤሌክትሪክ 4. ፋኑስ
	ከሚከተሉት የቤት ቁሳቁሶች መካከል የትኞቹ ያሉዎትን ያረጋግጡ?	
208	ራዲዮ	1 የለም 2 አለ
209	ቴሌቭዥን	1 የለም 2 አለ
210	ፍሪጅ	1 የለም 2 አለ
211	ወንበር	1 የለም 2 አለ
212	ጠረንጴዛ	1 የለም 2 አለ
213	አልጋ ከስፕሪንግ ፍራሹ	1 የለም 2 አለ
214	ሞባይል	1 የለም 2 አለ
215	ሳይክል	1 የለም 2 አለ
216	ሞተር ሳይክል	1 የለም 2 አለ
217	የፈረስ ጋሪ	1 የለም 2 አለ
218	ባጃጅ/ መኪና/	1 የለም 2 አለ
219	የባንክ ደብተር	1 የለም 2 አለ
220	ሶፋ	1 የለም 2 አለ

ክፍል ሦስት፡የመጸዳጃ ቤት ተደራሽነትን እና ተያዥሁኔታዎችን የተመለከቱ ጥያቄዎች

301	መኖሪያ ቤታቹህ መጸዳጃ ቤት አለዉ?	1=የለም 2=አዉ
302	ለጥያቄ ቁጥር 301 መልስዎ አዎ ከሆነ የመጸዳጃ ቤቱ ባለቤት ማን ነዉ?	1=የጋራ 2=የግል
303	ለጥያቄ ቁጥር 301 መልስዎ አዎ ከሆነ መጸዳጃ ቤቱ ምን አይነት ነዉ?	1 = ዉሃ የመጠቀም እና የማስወገጃ መስምር ያለለዉ 2 = ዉሃ የሚቀም እና ከፍሳሽ ማጠራቀሚያ ጋር የተያያዘ 3 = ዉሃ የሚጠቀም እና ከጉድጓድ ጋር የተያያዘ 4 = ዉሃ የሚጠቀም እና ወደ ዉጭ የሚፈስ 5 በአየር ማናፈሻ የተሻሻለ 6 = ስላብ የሌለዉ መጸዳጃ ጉድጓድ 7 = ኮምፖስት መጸዳጃ ቤት 8 = ባልዲ መጸዳጃ ቤት 9 = ተንጠልጣይ መጸዳጃ ቤት 88 = ሌላ (ይጠቀስ)----------
304	ከሌላዉ ቤተሰብህ/ሽ ጋር ተመሳሳይ መጸዳጃ ቤት ትጠቀማለህ/ሽ?	1=የለም 2=አዎ
305	ለጥያቄ ቁጥር 204 መልስ/ህ/ሽ የለም ከሆነ የት ትጠቀማለህ /ሽ?	1= ዉሃ የሚጠቀም እና በዉሃ የሚገፋ 2= የተሸሻለ ጉድጓድ መጸዳጃ 3=ያልተሸሻለ ጉድጓድ መጸዳጃ 4=ሜዳ/ቁጥቋጦ
306	ለጥያቄ ቁጥር 204 መልስ/ህ/ሽ የለም ከሆነ ምክንኛትህ/ሽ ምንድን ነዉ?	1 = ለመጠም አስቸጋሪ ነዉ/ለእኔ የማቻል ነዉ 2 = ሌሎች ሰዎች አይወዱትም / ለእኔ አይፈቀድም 3 = እኔ አፍራለሁ /ሰዎች ይስቁብኛል 4 = ሰዎች በንግግርም ሆነ በአካል ይሳደባሉ 5 = በጣም ሩቅ ነው 6 = መንገዱ በጣም ከባድ ነው 7 =መግቢያው በጣም ጠባብ / ደረጃ በጣም ከፍተኛ ነዉ 8 = መቀመጥ ስለማልችል /የምይዘዉ ነገር የለም 9 = በእጆቼና በጉልበቶች እድካለሁ እና መራቱ በጣም ቆሻሻ ነው 10 = የግላዊነት ማጣት 11 = ምቾት አይሰማኝም 12 = ሌላ (ይጠቀስ)
307	መጸዳጃ ቤቱ ከመኖሪያ ቤት ም ያህል ይርቃል?	1. ቢበዛ 6 ሜትር 2. ከ6 ሜትር በላይ ነዉ
308	ወደ መጸዳጃ ቤት ለመሄድ የሚከተሉትን አጋዥ መገልገያዎች ይጠቀማሉ?	1 ዊልቸር 2 ክራንች 3 ሰዉ ሰራሽ እግር እና እጅ 4 የሰዉ እገዛ 5 የለም ፣ነገር ግን እፈልጋለሁ
309	የመፀዳጃ ቤቱ መግቢያ ምን ያህል ሰፊ ነው?	1 = ከ1 ሜትር ያነሰ 2 =1 ሜትር እና በላይ
310	የመፀዳጃ ክፍሉ ምን ያህል ሰፊ ነው?	1= ከ 1 ስኬር ሜትር ያነሰ 2 =1 ስኬር ሜትር እና በላይ
311	መጸዳጃ ቤቱ ካለምንም ሰዉ እርዳታ ለመጠቀም ያስችለዎታል?	1=የለም 2=አዎ

312	የመፀዳጃ ቤቱ ከሰገራ ወይም ከሽንት ጋር ሳይነካኩ እንዲጠቀሙበት ያስችልዎታል?	1=የለም 2=አዎ
313	መጸዳጃ ቤቱ የእጅ መያዣ አለዉ?	1=የለም 2=አወ
314	መጸዳጃ ቤቱ መደገፊያ አለዉ?	1=የለም 2= አወ
315	መጸዳጃ ቤቱ የአካል ጉዳት ላለበት ሰዉ ተደራሽ ነዉ?	1=የለም 2,አዎ
316	መጸዳጃ ቤት ለማግኘት መግለል እና መድሎ ደርሶበዎታል?	1=የለም 2=አዎ
317	ስለተደራሽ መጸዳጃ ቤት ባለፈዉ 12 ወር ዉስጥ መረጃ አግንተሃል/ሻል ?	1=የለም 2=አዎ
318	መንግስት መጸዳጃ ቤት ዲዛይን ሲያደርገ ተማክረሃል/ሻል፣ተሳትፈሃል/ሻል?	1=የለም 2=አዎ
319	መንግስት መጸዳጃ ቤት ዲዛይን ሲያደርግ አንቺን/አንተን ታሳቢ አድርጓል ?	1=የለም 2= አዎ

ስለ ለአካል ጉዳተኞች ተደራሽ የሆነ መጸዳጃ ቤት አገነባብ ያላቸዉ እዉቀት

401	ከዚህ በፊት ለአካል ጉዳተኞች ተደራሽ ስለሆነ መጸዳጃ ቤት አገነባብ ሰምተህ/ሽ ታቃለህ/ሽ?	1=የለም 2=አዎ
402	ለጥያቄ ቁጥር 401 መልስዎ አዎ ከሆነ ለመጀመሪያ ጊዜ ከየት ሰሙ?	1. መገናኛ ብዙሃን 2.የጤና ባለሙያዎች 3.መንግስታዊ ካልሆኑ ድርጅት ሰራተኞች 4.ከቅርብ ወዳጅ /ዘመድ 5. ከየካል ጉዳተኞች ማህበር 88. ሌላ (ይጠቀስ)
403	ለአካል ጉዳተኞች የሚገነብ መጸዳጃ ቤት ምን ሊመስል እንደሚገባዉ ያዉቃሉ?	1=የለም 2=አዎ
404	ለአካል ጉዳተኞች የሚገነባ መጸዳጃ ቤት ምን አይነት ተጨማሪ ማሻሻያ ያስፈልገዋል ብለሽ/ህ ታስቢያለሽ/ህ?	1መንገድ 2. ደረጃዉ 3.መግቢያ በሩ ስፋት 4.መደገፊያ 5..የእጅ መያያዣ 6.የመጸዳጃ ቤቱ ስፋት 88. ሌላ (ይገለጽ
405	የጋራ መጸዳጃ ቤት ለአካል ጉዳተኞች ተደራሽ ሊሆን ይችላል ?	1=የለም 2=አዎ
406	ከመኖሪያቤት እስከ መጸዳጃ ቤት ያለዉ ርቀት ከ 6 ሜትር መብለጥ የለበትም?	1=የለም 2=አዎ
407	የአካል ጉዳተኞች መጸዳጃ ቤት መደገፊያ እና የእጅ መያያዣ ሊሰሩለት ይገባል?	1=የለም 2=አዎ

408	የአካል ጉዳተኞች መጸዳጃ ቤት መግቢያ በር ከ 1 ሜትር ማስ የለበትም?	1=የለም 2=አሥ
409	የአካል ጉዳተኞች መጸዳጃ ቤት የዉስጥ ስፋት ከ 1ሜትር ስኬር ማነስ የለበትም?	1=የለም 2 አሥ
410	የአካል ጉዳተኞች መጸዳጃ ቤት ከሌላዉ ማህበረሰብ መጸዳጃ ቤት የተወሰነ ማሻሻያ ያስፈልገዋል?	1=የለም 2=አሥ

ANNEX VII Amharic version guide for KII and IDI

የስምምነት ቅጽ (ለተሳታፊዎች የሚነበብ)

ደህና አደርክ/ሽ /ዋልክ/ሽ፣እኔ ----------እባላለሁ፡፡በባህርዳር ዩኒቨርሲቲ የህክምናና ጤና ሳንስ ኮሌጅ የጥናት እና ምርምር አባል ስሆን ጥናቱ የሚሰራዉ መጸዳጃ ቤት ለአካል ጉዳተኞች ያለዉን ተደራሽነት በሚመለከት ነዉ፡፡የጥናቱ አላማ በኮምቦልቻ ከተማ ለአካል ጉዳተኞች የመጸዳጃ ቤት ተደራሽነትን ለማወቅ እና ተያያዥ ሁኔታዎችን ለመለየት ነዉ፡፡እርስዎ ሌሎች የአካል ጉዳት ያለባቸዉን ግለሰቦች ወክለዉ ሃሳብዎን ማስተላለፍ ይችላሉ ተብሎ ስለታመነበዎት በዚህ ጥናት እንዲሳተፉ ተመርጠዋል ፡፡እርስዎ የሚሰጡት መረጃ ለአካል ጉዳተኞች መጸዳጃ ቤትን ተደራሽ ለማድረግ ስልታዊ እርምጃ ለመዉሰድ ያስችላል፡፡ ጥናቱ የሚካሄደዉ ክፍት በሆነ ቃለ መጠይቅ እና ዉይይት አማካኝነት ሲሆን ቃለ-መጠይቁ እስከ 30 ደቂቃ ሊወስድ ይችላል፡፡በዚህ ቃለ መጠይቅ እንዲካፈሉ በትህትና እየጠየኩ ፈቃደኛ ከሆኑ የሚሰጡት መረጃ ለጥናቱ አላም ብቻ የሚዉል መሆኑን አረጋግጣለሁ፡፡ የሚሰጡት መረጃ ሚስጢረዊነት ሙሉ በሙሉ የተጠበቀ ሲሆን ማንኛዉም አንተን/ችን የሚገልጽ ጥቅም ላይ አይዉልም፡፡በጥናቱ ያለመካፈል ፣ ማቋረጥ እና መጨረስ በእርዎ የሚወሰን ሲሆን አርስዎ የሚሰጡት ትክክለኛ ምላሽ ግን የጥናቱን አላማ ለማሳካት ወሳኝነት አለዉ፡፡

በጥናቱ ለመካፈል ፈቃደና ነዎት

አዎ [ ] ቀጥል የለም [ ] አመስግነህ አቋርጥ

የመረጃ ሰብሳቢዉ ስም----------ፊርማ----------

የአስተባባሪዉ ስም----------ፊርማ----------

ANNEX IV Amharic version key informant participant guide

ግላዊ መረጃ

የስራ ድርሻ_____

ሙያ_____

1. **እርስዎ ባለዎት ሃላፊነት የሚሰሩት ተግባር ለአካል ጉዳተኞች ደራሽ የሆነ መጸዳጃ ቤትን ለማሻሻልን ያለዉን ሚና እንት ይገልጹታል**
2. **እርስዎ ብዙ የተገደበ የመጸዳጃ ቤት ተደራሽ ያላቸዉ የአካል ጉዳተኞች መኖራቸዉን ያዎቃሉ፤እንዴት**
3. **ለአካል ጉዳተኞች መጸዳጃ ቤት ተደራሽነት እንዳይሆን የሚያደርጉ መሰናክሎች ምንድናቸዉ**
   - **እንዴት?**
   - **ለወደፊት መሰናክሎችን ለመቅረፍ ምን ታቅዷል?**
   - **በምን መልኩ?**
4. **ለአካል ጉዳተኞች የመጸዳጃ ቤት ተደራሽነትን በቤተሰብ ደረጃ ለማረጋገጥ በአካባቢዉ ማህበረሰብ፤በመንግስት እና መንግስታዊ ባልሆኑ ተቋማት ምን የተከናወነ ተግባር አለ**
   - **የተቋሙ እና ፕሮግራሙ ስም (አይነት)**
   - **የአካል ጉዳተኞች በምን አይነት መልኩ የፕሮግራሙ ተጠቃሚ እየሆኑ ነዉ?**
   - **በከተማዉ ለአካል ጉዳተኞች ምን አይነት ስነ-ንጽህና ስልቶች እየተተገበሩ ነዉ?**
5. **እርስዎ በከተማዉ የስነ-ንጽህና ፕሮግራሞችን ሲያስተግብሩ ምን ያክል አካል ጉዳተኞችን ሁኔታ ታሳቢ ያደርጋሉ ?**
   - **እንዴት?**
   - **ምሳሌ ሊሰጡን ይችላሉ? (ሃሳቡ ካልተነሳ)**
6. **እርስዎ የአካል ጉዳተኞች ተደራሽ መጸዳጃ ቤት ለማግኘት በማህበረሰቡ የሚደርሰዉን ማግለል እና መድሎ እንዴት ይገልጹታል?**

   -በዚህ ዙሪያ ለወደፊት ምን ለመስራት ተቅዷል

   በምን መልኩ?

7. የአካል ጉዳተኞች ስለተደራሽ የሆነ መጸዳጃ ቤት እንዲረዱ ለመርዳት የተለየ ስልት መኖር አለበት ብለዉ ያስባሉ ,
   - ለምን?
   - እንዴት ሊተገበር ይችላል?
8. የአካል ጉዳተኞች ተደራሽ የሆነ መጸዳጃ ቤት ለመገንባት ያላወቹን እዉቀት እንዴት ይገልጹታል?
   - ለምን
   - ተደራሽ ስለሆነ መጸዳጃ ቤት መረጅ እንዴት እያገኙ ነዉ? How?
9. ተጨማሪ አስተያያት እና ሃሳብ ካለዎት?

አመሰግናለሁ!!!

ANNEX V Amharic version in-depth interview participant guide

ግላዊ መረጃ

ፆታ_____

ዕድሜ_____

1. **ቤታቹህ መጸዳጃ ቤት አለዉ? (ሁሉም አይነት)**
2. **ለእርስዎ ያለዉን ተደራሽነት እንዴት ገልጹታል?[የተደራሽነት መለኪያወችን በመጥቀስ]**

- **አርስዎ መጸዳጃ ቤት ለማግኘት/ሲጠቀሙ የሚያጋጥመዎት ችግሮች ይግለጹ**

3. **እርስዎ ተደራሽ የሆነ መጸዳጃ ቤት እንዳያገኙ/እንዳኖሮዎት የሚያደርጉ መሰናክሎች ምንድን ናቸዉ?**
   - **እንዴት? [ለእንያዳንዱ ይብራራ]**
   - **የእርስዎን ልምድ ቢያጋሩን?**
4. **በአንዳንድ የማህበረሰብ ክፍሎች በተለይ የአካል ጉዳት ያለባቸዉ የማህበረሰብ ክፍሎች መጸዳጃ ቤት ተደራሽ እንዳይሁን የማግለል፣ማድላት እና ማሸማቀቅ ባህላዊ ልምዶች ይስተዋላላል። አርስዎ ይህን እንዴት ይገልጹታል?**
5. **የእርስዎ የገቢ መጠን ለመጸዳጃ ቤት ተደራሽነት ጫና አሳድሮብዎታል? እንደት?**
6. **አርስዎ ተደራሽ የሆነ መጸዳጃ ቤትን በሚመለከት መንግስታዊ እና መንግስታዊ ባልሆኑ ተቋማት የሚተላለፈዉን መረጃ እነዴት ያዩታል?**
7. **እርስዎ መጸዳጃ ቤት ዲዛን ሲደርጉ እና ሲገነቡ መንግስት እንዴት አማክሮዎት ?[ይብራራ]**
8. **ተጨማሪ አስተያየት እና ሃሳብ ካለዎት ይጨምሩ**

አመስግናለሁ!!!