

**Knowledge and Practice of Foot Self-Care, and Associated Factors Among  
Diabetic Patients at Hiwot Fana Specialized University Hospital, Harar,  
Eastern Ethiopia**

**SPECIALTY CERTIFICATE THESIS**

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**Haramaya University, Harar, Ethiopia**

**Knowledge and Practice of Foot Self-Care, and Associated Factors among  
Diabetic Patients at Hiwot Fana Specialized University Hospital, Harar,  
Eastern Ethiopia**

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I hereby certify that I have read and evaluated thesis entitled with Knowledge and Practice of Foot Self-Care, and Associated Factors among Diabetic Patients at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia under my guidance by Hora Yohanis. I recommend that it be submitted as fulfilling the Thesis requirement.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

ADA	American Diabetes Association
AOR:	Adjusted Odds Ratio
B-cell	Beta Cell
CDC	Center for Chronic Disease Control
COR	Crude Odds Ratio
DFD	Diabetic Foot Disease
DFU	Diabetic Foot Ulcer
DM	Diabetes Mellitus
ETB	Ethiopian Birr
HFSUH	Hiwot Fana Specialized University Hospital
IDF	International Diabetes Federation
IWGDF	International Working Group on Diabetic Foot
LLA	Lower Limb Amputation
PN	Peripheral Neuropathy
NCDs	Non - Communicable Diseases
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
T1DM	Type 1 Diabetes Mellitus
T2DM	Type 2 Diabetes Mellitus
USD	United States Dollar
WHO	World Health Organization

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## ABSTRACT

**Background:** Diabetic foot ulcer and leg amputation are one of its most common complications. Rate of leg amputation is every 30 second somewhere in the world, due to diabetes. Diabetes in Ethiopia is real health challenge regarding its foot complication. Despite poor foot self-care knowledge and practices are important risk factors for foot problems in diabetes, the level of knowledge and practice regarding diabetic foot self-care and its associated factors are unknown in the study area.

**Objective:** This study was conducted to assess the knowledge and practice of foot self-care and associated factors among adult diabetic patients.

**Methods:** Institution based cross-sectional study was conducted on 214 participant using simple random sampling and data was collected by interviewer administered questionnaires. Furthermore, descriptive statistics, binary and multivariate logistic regression were employed by SPSS version 24.0 to assess the predicators of knowledge and practice of diabetic foot self-care.

**Results:** Majority of the respondents were male (54.7%) and the mean age was  $45 \pm 12.6$ . Overall good Knowledge and Practice of foot self-care was 57.5% and 63.1% respectively. Participants who were in the age category of 36-45 were 39.1% lower compared to > 55 years (AOR= 0.309; 95% CI: .104,.915), and those who can't read and write were 99.1% times less likely as compared to those attended high school (AOR= 0.009; 95% CI: .001,.123) to have good knowledge. Respondents who were in the age category of 26-35 were 72.4% lower as compared to > 55 years (AOR= 0.276; 95%CI: .086,.884), and male were 90.1% less likely as compared to females (AOR= 0.099; 95%CI: .026,.377) to have a good practice.

**Conclusion:** Knowledge and Practice of foot self-care of diabetic patients is low. Independent predictors including age, educational status, occupational status and income were identified as factors significantly associated knowledge of foot self-care. Study setup should design, facilitate and strength awareness creation strategy for knowledge and practice of foot care for diabetic patients especially those lack for formal education and get low income. Policy makers should initiate interventional foot care education program for the study area.

**Keywords:** Diabetic Foot Disease, Foot self-care, Knowledge

# 1. INTRODUCTION

## 1.1 Background Information

Diabetes Mellitus (DM) is a non-communicable, serious chronic disease. It happens when the plasma glucose levels is high, since the body cannot produce any or adequate insulin (hormone that regulate glucose), or cannot effectively use the insulin it produces (Internation Diabetes Federation, 2019).

There are different class or types of Diabetes. Type 1 diabetes (T1DM) characterized by absolute insulin deficiency due to autoimmune Beta-cell damage while Type 2 Diabetes (T2DM) (previously known as insulin-independent, adult onset) is result from relative insulin deficiencies, accounting for around 90% of all cases of diabetes. There are also other class of diabetes such as monogenic diabetes syndromes including maturity-onset diabetes of the young (MODY), diseases of the exocrine pancreas, drug induced diabetes such as glucocorticoid. Gestational diabetes mellitus is also other type of diabetes (World Health Organization, 2019).

Diabetes is a worldwide epidemic, the emerging endocrine problem of 21<sup>st</sup> century. In 2019 according to International Diabetic Federation (IDF), around 463 million adults of 20–79 years worldwide, nearly 9.3% of all adults in the mentioned age group have diabetes. The total number is predicted to rise to 578.4 million (10.2%) by 2030 and to 700 million (10.9%) by 2045. One in two adults with diabetes are undiagnosed, unaware that they have the disease. It is estimated that 79.4% live in low- and middle-income countries(IDF, 2019). World Health Organization (WHO) also indicated that the prevalence of diabetes has been increasing for the past 3 decades, mostly in low- and middle-income countries(WHO, 2019).

In Africa according to IDF African region report, around 19 million have diabetes in 2019 that shows increments from 14.5 in 2015, and estimated to rise to 29 million in 2030, and 47 million in 2045(IDF, 2019). The prevalence DM in Ethiopia among adult people (20-79 years) is 4.3%, and nearly one in 31 adults have diabetes. Among 1,699.4 Ethiopian adult persons with diabetic mellitus in 2019, 68.2% are undiagnosed(IDF, 2019).

Diabetic Mellitus affect many organ systems and are responsible for the majority of morbidity, mortality and increased healthy related cost. Approximately 4.2 million adults aged 20–79 years are estimated to die as a result of diabetes and its complications in 2019. This is equivalent to one

death every eight seconds. Estimated total DM-related health spending reach 760 billion United states dollar in 2019. This represents a 4.5% rise on the 2017 estimate(IDF, 2019). According to CDC in United States, diabetes-related costs were 245 billion dollars and when adjusted for age and gender the average spending per person is around two-fold higher compared to nondiabetic patients(CDC, 2017).

Diabetic foot disease which include peripheral neuropathy, peripheral arterial disease, foot deformity & ulceration and lower limb amputation is important source of morbidity, mortality socioeconomic and psychologic impact. It can occur in both T1DM and T2DM. Chronic ulcers and leg amputations result in a significant reduction in the quality of life and increase the risk of early death. Lower limb amputation in people with diabetes is 10 to 20 times more common compared to those without diabetes (IDF, 2019). Comprehensive foot care based on prevention, education and support by a multi-disciplinary team reduces foot complications and amputations by up to 85% in diabetic patients(Abdul and Asmat, 2013).

**Foot self-care:** is foot care interventions that patient can do at home, consisting of; daily foot inspection, washing of feet, careful drying between the toes, nail cutting, using emollients to lubricate skin but not moisture interdigital of foot, not using chemical agents or plasters to remove callus(avoid self-treatment of foot abnormalities), footwear selection and inspection, avoidance of walking barefoot or on socks only or in thin-soled slippers, avoidance of wearing tight socks, avoiding exposure to excessive cold and heat, but not limited to these (IWGDF, 2019)

## **1.2 Statement of the problem**

Foot or part of foot is lost by amputation every 30 second somewhere in the world, making rate of amputation every 30 second in part of the world, as a consequence of diabetes and mortality after DFU is high, around 48% within 5 years which is more common in low- and middle-income countries(IDF, 2019). Care of diabetic foot is costly. Among patients with foot ulcers, costs for treating those with the high-grade ulcers were 8 times higher compared to treatment of the lowest grade(Abbott *et al.*, 2002). Study in United states on direct costs for lower-extremity-related care reveals nearly 59 billion dollars is spent annually (Armstrong *et al.*, 2017).

Diabetic foot ulceration is associated with high levels of morbidity/disability and mortality, as well as significant financial costs and emotional losses(IDF, 2019). It has been estimated that 19-34% of all diabetic patient will develop foot ulcer at some point of time in their life and incidence rate

is approximately 2% (Abbott *et al.*, 2002). Armstrong *et al.*, (2017) stated that, recurrence rates of successfully healed DFU is 40% within a year and 60% within 3 years and 65% within 5 years (Armstrong *et al.*, 2017).

In Ethiopia, from 2010 to 2013 admitted diabetic patient to black lion hospital, the main reason for admission was DFU which accounts for 39% (Gizaw *et al.*, 2015). Study done from 1999 to 2004 at black lion hospital showed the most common mode of presentation (47%) of DFU was cellulitis or gangrene. In this study re-amputation occurs in 26% cases and generally foot ulcer related mortality was 21%. Identified preceding risk factors (44%) for foot ulcer is ill fitting or new shoes, indicating poor awareness of foot care and delay in presentation were the major contributing factor related morbidity and mortality (Amogne *et al.* (2011).

Usually, diabetic foot amputations are preceded by complicated foot ulcers, whose risk factors are poor knowledge and practicing such as foot hygiene, wearing inappropriate footwear, walking barefoot and delay to seek medical care early before condition gets worse. Patient late presentation with gangrene & infection, invasive surgical interventional treatment and patient refusal to surgical intervention contribute to high morbidity, disability & mortality. These factors can be corrected when noticed early, with patients having adequate knowledge of patient centered diabetic care and practice of self-foot care. If these practices are put into practice, foot disease will be detected early leading to prevention of foot ulcer & amputation (Abbas and Archibald, 2014).

Diabetes is chronic disease in which achievement of its long-term care to decrease its complication is mainly based on patient's awareness and adherence to self-care practice intervention. It is known that with poor management, it results in multisystem and multi-organ complications among which diabetic foot disease is common and feared complication (IWGDF, 2019).

Despite the current trend emphasis on education and patient involvement in self-care, most study exposed that the knowledge and practice of self-foot care among DM patients were poor. Indian study revealed most of patients (75.8) had poor knowledge in foot care practices, 25% walked barefoot (Balram and Reena, 2019). Hospital based study in Nigeria revealed that majority of DM patients (78.4%) had poor practice & knowledge of self-foot care and more than half of them have no idea what to do first when they notice redness/bleeding and also not understand the significance of inspecting inside of their shoes for objects or torn (DESALU *et al.*, 2011). Study in Ethiopia,

highlighted 56.2% & 53.0% had good awareness and practice, while 43.8% and 47.0% had poor knowledge and foot care practice, respectively(Awole and Yosief, 2014).

To my knowledge there is no study conducted in this area. This study therefore proposed to investigate level of knowledge, practice of self-foot care among adult people living with diabetes in Hiwot Fana Specialized University Hospital.

### **1.3 Significance of the study**

This study has benefits of giving information for health policy makers and it is important for health professionals, especially those who work on diabetic to build up the knowledge on the areas and the result of the study can be used for health education and awareness creation of self-care practice for patients with diabetes since it shows awareness and practice of diabetic foot care. The findings of this study will also contribute greatly to the benefit of society considering that better diabetes self-care practice utilization results in improved wellbeing of diabetes patient. Lastly, the finding will benefit researchers those interested in the field by providing information regarding to diabetic foot ulcer in the study area.

### **1.4 Objective of the study**

#### **1.4.1 General Objective**

To assess the level of knowledge and practice of foot self-care, and associated factors among adult diabetic patients in Hiwot Fana Specialized University Hospital, Harar, eastern Ethiopia, from November to December, 2020

#### **1.4.2 Specific Objectives**

To assess the level of knowledge of foot self-care among adult diabetic patients

To assess practice of foot self-care among adult diabetic patient

To identify factors associated with knowledge and practice towards foot self-care among adult diabetic patient.

## 2. LITERATURE REVIEW

### 2.1 Global burden of Diabetes and Diabetic Foot Disease

Chronic, serious non-communicable disease such as diabetes are among the leading cause of early mortality and morbidity. IDF stated that, universally there has been worrying rises in the number of adult people (20-79 years) who had diabetes mellitus from 151 million in 2000 estimate to 463 million in 2019, nearly tripling in number (IDF, 2019) According World Health Organization estimation, there is significant rise in number of adults (> 18 years) diabetic patient from 108 million diabetic people in 1980 to 422 million in 2014, nearly quadrupling in number of people living with diabetes(WHO, 2019).

DFD is among the most common complication of diabetes, the major source of morbidity, hospitalization, mortality and increased health care cost. Chronic ulcers and amputations result in a significant reduction in the quality of life and increase the risk of early death. Globally Diabetic foot disease, affect 40 to 60 million people living with diabetes (IDF, 2019). Around five to ten percent of patient with diabetes have had past or present foot ulcer and 1% have lost their lower-limb. Worldwide incidence of non-traumatic foot ulcer in diabetes was 2.2% and increased to 7% in presence of neuropathy and to as high as 50% in presence of previous history of ulcer. It is estimated that, as high as 25% of diabetic patient has lifetime risk for occurrence diabetic foot ulcer (IDF, 2019)

In United States the most common cause of non-traumatic lower limb amputation is diabetic foot ulceration which is 15 times more than those population of nondiabetic. Nearly eighty percent of diabetic foot amputation are preceded by foot ulcers. A huge community-based patient cohort in the United Kingdom, North-west England, confirmed that new ulcer event is 4.4% over 2 years. In this study the prevalence of peripheral neuropathy (PN) is 22%(Abbott *et al.*, 2002). Ramsey SD in his cohort study showed that incidence of foot ulcer in diabetic patient was nearly two percent. This study also revealed that the presence of ulcers increases morbidity, mortality, and health related costs were compared with diabetic patients without ulcers(Ramsey *et al.*, 1999). One prospective cohort study in Iran, highlighted incidence of DFU in two year follow up was 5.62%, making 2.8% annually, after all participants were examined at beginning and followed (Leila *et al.*, 2018)

In Nigeria one retrospective study revealed that the prevalence of diabetic foot ulcer is 6%. In this study foot ulcer are more common in men (67.2%) than women (32.8%). Among these 40% of them had stage four diabetic foot ulcer which costs nearly 1808 US dollars to treat and approximately 26 % patients have stage III ulcer that costs around 1104 US dollar health care spends to treat it. Still nearly 17% of them had stage II-foot ulcer for which the spends 556 US dollar stage II, and in all cases cost of obtaining drugs represent the maximum burden of total healthcare spending in treating DFU which account averagely 40%(Umar *et al.* (2016). Another retrospective cohort study in Ghana (Sub-Saharan region), from 1st January 2010 to 31st December 2015 after a median follow-up of more than four years showed that average incidence rate lower leg amputation in diabetic was 2.4/1000 follow up years: increasing from 0.6/1000 follow up years in 2010 and 10.9/1000 follow up years in 2015(Osei *et al.* 2019).

In Ethiopia, at Large Referral and Teaching Hospital, Black Lion, Descriptive retrospective study done from 2010 up to 2013, showed 6.5% (523/8048) of admission is due to DM. Among 418 medical record retrieved, 72% of them are type 2 while 28% are type 1, Main admission diagnoses for T2DM were diabetic foot ulcer (39%) making one in three admitted diabetic patients had foot ulcer. In this study in-patient mortality was 21%(89/418), of which 77 deaths are among patients with T2DM, making approximately 18% mortality due to T2DM, for which the main reason for admission were DFU(Gizaw *et al.*, 2015).

## **2.2 Knowledge and Foot Self-Care Practice among Diabetic Patient**

Accurate patient's knowledge regarding self-foot care is paramount defense line in preventing foot disease and lower-limp loss in Diabetic patient. Appropriate self-foot care practice is also very important for reducing progression of low risk to high risk foot disease and the incidence of foot ulcer. Most studies revealed the knowledge and self-care practice among DM patients were poor (Nadia, 2010).

One cross sectional study done in India to assess awareness and practice of self-foot care among 31 T2DM in a rural area highlighted that, approximately 65% of them do not know that foot care in diabetic patient need special caution, large percentage (nearly 78%) unaware weather smoking affect feet, and another huge percentage closely 68% do not check inside of their shoes before putting on. This study also revealed approximately 74% walk without footwear and nearly 55%

did not cut their toenails properly(Subhashini and Pankaj, 2016). Seema and Naheed conduct study in Pakistan in 2019, to investigate knowledge and practice of self- foot care, with 150 participants of diabetic patient. In this study who scored more than 70% of administered question had good knowledge & practice, 50-70% regarded as satisfactory, otherwise poor. Based on this category closely 29% respondents had good, 40% had satisfactory and nearly 31% had poor awareness. Concerning foot care practice, 14% of respondent had good, majority of them (54%) had satisfactory and 32% had poor foot care practices. Among participant those had both poor knowledge and practice were less than 5%(Seema and Naheed 2019).

One across sectional study in Malaysia involving 157 participants of DM patients, exposed that greater than half of them (58%) had poor knowledge of foot care, while nearly 62% had poor diabetic foot care practice (Muhammad-Lutfi *et al.* 2014). Study in Istanbul, Turkey, that investigates knowledge and practices of self-foot care among 1030 participants of diabetic patients between November 2017 and February 2018, revealed 29.5% had bad, closely half of them had moderate practice and approximately one fifth of them had good sel-foot care practice(Fatma *et al.*, 2019). Study in China exposed four out of five of the participant had good knowledge of foot care, but only 71% had satisfactory practice score and nearly 22% responded as good practice of self-foot care (Erva and Rebecca, 2017). Study conducted in India highlighted majority of 212 participant had good knowledge (about 75%) and good foot care practice (about 67%)(Hanu *et al.*, 2013).

In 2013 a study conducted in South Africa, Johannesburg at Dr.Yusuf Dadoo district hospital, with 120 participant showed only 24.2% reported awareness of self-foot care making that more than 75% of the patients had no knowledge of foot care. In this study 54.2% inspected their shoes and 25% walked barefoot & closely 28 % of them had no self-foot care practice, they did not care for their feet personally. Although, more than half of them (nearly 72%) had performed foot self-care sometimes in the past, only one third of them had had foot examination by their doctor or nurse and small percentage nearly 6% by their podiatric (Dikeukwu and Omole, 2013)

In 2011 O.O. Desalu in Nigeria, has highlighted that Majority (78.4%) of participants those had poor practice also had poor knowledge of diabetic foot care and more than 50% of them were unaware what to do when they detect redness/bleeding. They also do not know the importance of

inspecting the inside of the footwear. In this study poor self-foot care practices involves: failure to accept guidance when they bought shoes (89.2%) and lack of proper size footwear, making nearly 89% fail to get proper size (DESALU *et al.*, 2011). Another Study in 2019, involving 150 diabetic patients in Sudan reported that, approximately 47% had good knowledge, 29.3 % respondents showed poor awareness while one fourth of them had satisfactory. Concerning practice of self-foot care, 42.6% had good, 36.7% moderate and 20.7% had poor practice (Safa *et al.* 2019).

Awole and Yosef (2014) conducted Hospital based descriptive cross-sectional study in Bahirdar, Ethiopia, in 313 diabetic patients, 64.9% were male, average age is  $39.1 \pm 16$ , to investigate awareness, practice and barrier of foot self-care. Among these 43.8% had poor knowledge, of these 50.6% unaware what to do and 56.2% had good awareness of diabetic foot care. Concerning practice of foot care 53.0% had good and the 47.0% had poor foot care practice (Awole and Yosief, 2014). Study conducted at Hawassa University Comprehensive Specialized Hospital, Southern Ethiopia, revealed that among total of 139 diabetic patients, 27.3% have good knowledge and 46.8% have good practice of self-foot care (Birhanu, 2018).

## **2.3 Factors affect knowledge and practice of Foot self-care**

### **2.3.1 Sociodemographic factors**

Hanu et al, (2013) in India conducted Hospital based cross sectional study with 212 diabetic patients at outpatient department of rural secondary care revealed that a huge percentage (87.3%) of responder walks bare foot at home, which is an age old cultural/religious practice in most rural Indian households. This study also exposed being male (OR 2.36) and lack of formal education (OR 2.40) were significantly associated with poor knowledge on foot care (Hanu et al., 2013). One study in India showed poor knowledge and practice of foot care had significant association with lack of formal education (p-value < 0.05) (Deepa et al. (2017). A study in United Arab Emirates showed that illiterate participate had poor practice of foot care (p-value =0.002), had poor understanding on risk factor of foot disease and selection of appropriate foot wear. In his study he also revealed being female and past history of foot disease/ulcer significantly associated with good practice of foot care (Alkaabi et al. 2015).

Study conducted in Nigeria showed lower knowledge and practice score were significantly associated with poor education attainment (p-values = 0.003), and low socioeconomic status (p-value = 0.001). In this study Age and Sex had no impact on knowledge and practice of foot care

P- values is 0.47 and 0.23 respectively (DESALU et al., 2011). Another study conducted in Sudan revealed that awareness and practice of self-foot care significantly correlated with increase in age, more knowledge score in age group from 51-60 and then decrease after age 60 years (p-value = 0.008). In other hand poor awareness of foot care significantly correlated with illiteracy (p-value = 0.004), low income (p-value = 0.026), being a single & divorced (p- value = 0.015)(Safa et al., 2019).

### **2.3.2 Clinical Information/Patient Related Factor**

In 2016, Hospital based cross sectional study in India stated that duration of the diabetes more than 5 years is significantly associated with awareness (p-value= 0.002) and skill of self-foot care (p-value = 0.001). this study also revealed frequency of diabetic foot disease had significant statistical association with awareness (p-value < 0.0001) and ability to self-foot care (p-value = 0.007)(Pinakin and Ashish, 2016). In Saud Arabia, one study revealed that Patients with longer duration of diabetes (>5 years) significantly had better practice of diabetic foot care (p- value < 0.05) (Alshammari *et al.* (2019). In other hand study conducted in chine showed long duration of diabetes more than 10years had five times less practice of foot care (OR 0.5, p = 0.021) and those who had family history of diabetes associated with nearly 50 % less likely to have a good practice (OR 0.49, p = 0.008)(Erva and Rebecca, 2017).

### **2.3.3 Health Care System Related Factor**

Hospital based cross-sectional analytical study with 330 diabetic patients at outpatient clinic in China reported that giving diabetes education makes twice as likely to have a good knowledge of foot care. This study also revealed DM patients those attending at charity outpatient visit had high mean knowledge score, three times when compared with those patients who had follow up and care at private(Erva and Rebecca, 2017). Nadia. (2010) in Islamabad Pakistan reported that appropriate practice of self-foot care was significantly related with education of foot care, making those who were provided foot care education showed proper practice of foot care (p-value = 0.001) (Nadia, 2010). In 2016 hospital based descriptive cross-sectional study was conducted in South Africa with 200 participants of type two Diabetic patients revealed that huge percentage of them (90%) stated no provided diabetic foot disease education and only small percentage (22.2%) of them reported their feet was examined by their health care provider, even this is when they experienced a foot problem(Goie and Naidoo, 2016).

According to Faraja and Marina., (2015) in Tanzania, low mean score on knowledge of self-foot care was significantly associated with not receiving foot care advice (p-value = 0.001). This study showed between 404 participants, 48 % had guidance on foot care, and small percentage (27.5 %) undergo foot examination by their care giver (doctor) at least once from early diagnosis. Practice of self-foot care was importantly greater among individuals those guided about foot care and in those examined by their care giver at least once (Faraja and Marina, 2015).

In 2015 randomized controlled clinical trial that investigate effect of education on knowledge and practice of foot care involving 69 diabetic patient those referred to Iranian diabetic clinic confirmed that interventional education significantly increases mean knowledge and practice score among the interventional group (p-value < 0.05) (Beiranvand and Fayazi, 2015). In Ethiopia, Awole and Yosef. (2014) observed that among 162 respondents who had barrier of knowledge and practice of foot care, 56.8% said “poor communication between patients and health care providers,” 50.6% reported “I do not know what to do, “and 44.4% responded “inconveniency for work” as barriers of foot care (Awole and Yosief, 2014).

## Conceptual Frame Work

This conceptual frame work was developed after literature review related to diabetics and diabetic foot disease.

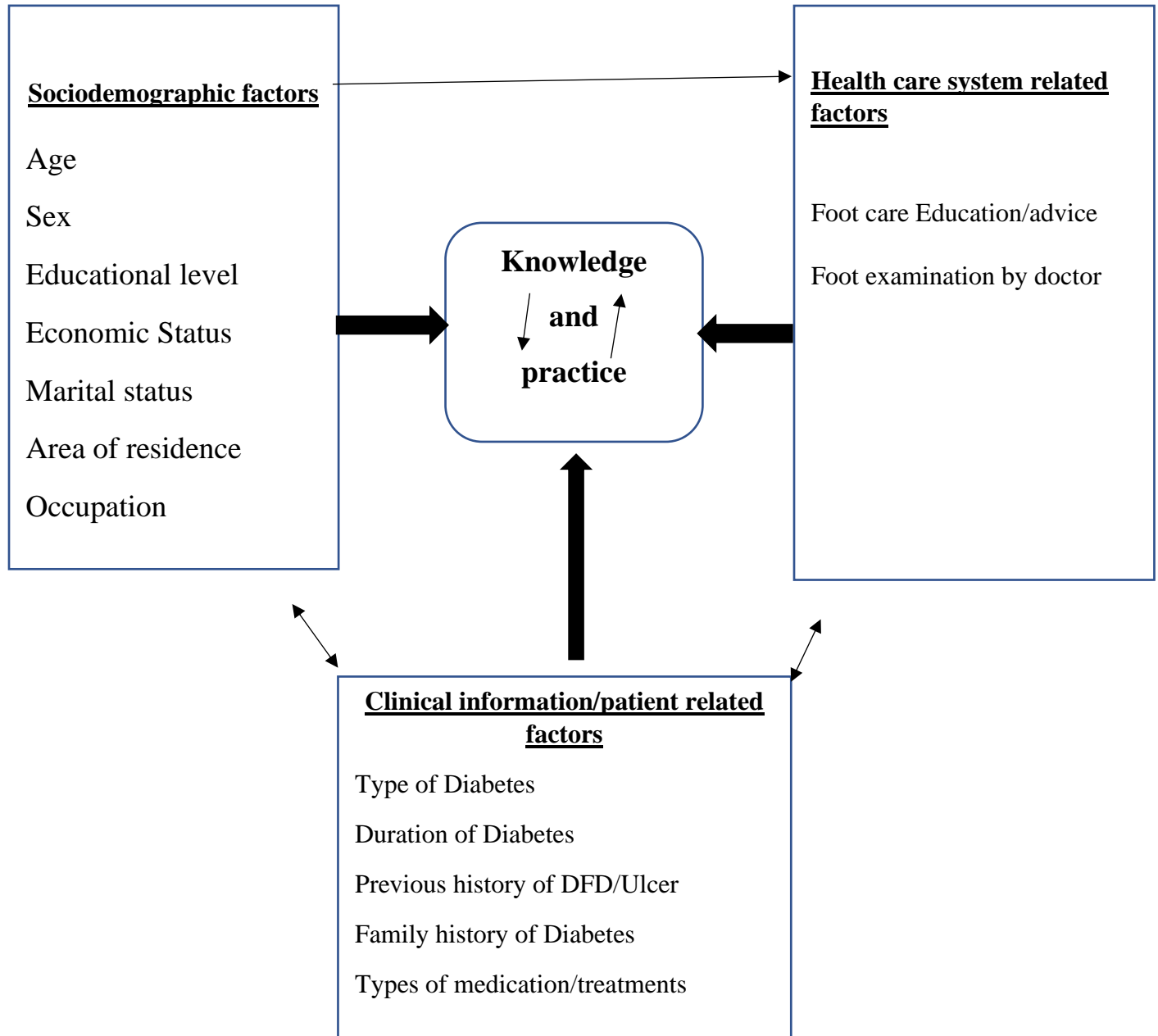


Figure 1: Conceptual framework showing factors affecting knowledge and practice of foot care

### **3. MATERIALS AND METHODS**

#### **3.1 Study Area**

The study was conducted in one government Hospital, Hiwot Fana Specialized University Hospital, which is found in Harar, Harari region, eastern Ethiopia. Harar, the capital city of the region is found 526 km far to the East from Addis Ababa, Ethiopian capital. The region has nine administrative woredas under which 19 city and 17 rural kebeles are found with total area of 334 km<sup>2</sup> surrounded by Oromia region. Based on the 2007 census conducted by Central Statistical Agency (CSA), Harari has a total population of 183,415 of whom 92,316 were men and 91,099 were women. This region is the only one in Ethiopia where the majority of its population (54.8%) lives in urban area. The population of the region is projected to 246,000 in 2017 by Central Statistical Agency (CSA, 2014).

There are six hospitals and nine health centers in this region. Hiwot Fana Specialized University Hospital is one of the two government hospitals. It is believed to be established between 1936 and 1941. It has been under Haramaya University since 2011 provides inpatient and outpatient health care services and serves as a referral hospital for total catchment area population of 5.3 million population according to current Hospital source. It has a total of 185 inpatient beds distributed among four major departments (HFSUH HMIS 2019).

#### **3.2 Study Period**

The study was conducted from November to December, 2020.

#### **3.3 Study design**

Institution-based, cross-sectional study was conducted on adult diabetic patients attending outpatient endocrine clinic, Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia.

#### **3.4 Source Population**

All adult diabetic patients, who has been on follow up at endocrine clinic in HFSUH, Harar Eastern Ethiopia.

#### **3.5 Study population**

All adult diabetic patients who have been on follow up and had at least one visit at endocrine clinic in HFSUH during the study period.

### 3.6 Inclusion and Exclusion Criteria

#### 3.5.1 Inclusion Criteria

All adult (aged > or = 18 years) diabetic patients who has been on follow up and had at least one visit at Endocrine clinic, at HFSUH, during the study period.

#### 3.5.2 Exclusion Criteria

Those who are currently pregnant, non-diabetic before pregnancy

### 3.7 Sample Size Determination

The required sample size was determined by using a single population proportion estimating formula considering the hospital based research conducted in Bahir Dar city that revealed 56.2% of the populations have a knowledge of foot care among diabetic patients who had follow-up at outpatient Endocrine clinic(Awole and Yosief, 2014) and by considering a 95% confidence level, 5% margin of error. Then, 10% was added for the expected non-response.

Sample size was determined by Using single population proportion formula:

$$n = \frac{Z^2 \times P(1-P)}{d^2} = \frac{1.96^2 \times 0.56(1-0.56)}{0.05^2} = 379$$

Where:

n = sample size

Z= which is 1.96 is the standard normal deviate which correspond to 95% confidence interval

P = proportion diabetes patients, who had knowledge of foot care, 56.2 % taken from similar study

d= margin of error expressed in proportion (0.05)

Population of diabetic patient in the selected facilities was less than 1000, so the sample was adjusted as follow

$$\text{Adjusted sample } N_f = \frac{N}{1 + \frac{N}{n}} = \frac{400}{1 + \frac{400}{379}} = 194$$

where **n** is calculated sample size for large size which is 379 and N is the source population

The sample was further increased by 10% to account for contingencies such as non-response or recording error =  $n * 10\% = 19.6 + 194 = 214$

### **3.8 Sampling Procedure/ Technique**

First Hiwot Fana Specialized University Hospital, was selected purposively because of case load was high in this hospital regarding to the research area. To select the study participants, the number of patients within one month having followed up in Endocrine clinic was taken. Then the list of diabetic patients was obtained from the follow up registration book. After these study participants was selected randomly by using random computer-generated number. Following this the selected subjects were communicated in order to get their volunteer to participation in the study.

### **3.9 Data collection methods**

#### **3.8.1 Data collection instrument/tool**

Data was collected by face-to-face interview using a structured pre-tested questionnaire, developed from previous similar study in Ethiopia(Awole and Yosief, 2014) and Nottingham Assessment of Functional Footcare tool (NAFF) (Mie *et al.*, 2011) with slight modification and adapted to the context of the study area. The questionnaire was first prepared in English and translated to Afan Oromo and Amharic, then translated back to English by another person to check its consistency. The questionnaire had four sections: Socio-demographic factors; knowledge and practice each consists of 15 & 7 questions respectively; and clinical information & healthcare related factors consists of 7.

#### **3.8.2 Data Collectors and Supervisors**

Data collection was performed by four diploma nurses. Also, one senior BSc nurses were recruited as supervisor. Each team gave a standard scope of work, encompassing data collection (interview of the respondent, recorded in a structured questionnaire). Supervisor had collected and checked the record questionnaire and made a correction a missed data

### **3.10 Study Variables**

#### **3.10.1 Dependent Variable:**

Knowledge and practice of foot self-care

#### **3.10.2 Independent Variable:**

**Sociodemographic:** Age, sex, level of education, place of residence, marital status, occupation & economic status

**Diabetic/clinical information:** Type of DM, Duration of DM, Previous history of DFD, Family history of DM, type of medication/treatment.

**Healthcare system related:** Diabetic Foot Care Education, diabetic foot examination by doctor

### **3.11. Operational definition**

**Good Knowledge of Foot Care:** This include participants who score mean or above on knowledge questions (Mie *et al.*, 2011)

**Poor Knowledge of Foot Care:** This include participants who score below the mean on knowledge questions(Mie *et al.*, 2011)

**Good Foot Care Practice:** This included a total practice score of  $\geq 50\%$  of maximum score

**Poor Foot Care Practice:** This included a total practice score of  $< 50\%$  of maximum score

**Diabetic foot self-care:** Ability of the patient to perform self-care activities that help the feet to be healthy(IWGDF, 2019)

### **3.12. Data Quality Control**

The quality of data was assured by proper designing of the questionnaire and pre-testing of the questionnaire on 10 % the total sample size before one week of the actual data collection time, of the hospital other than the study hospital which is the same setting up of the study hospital and make amendment based on the obtained information.

Two-days training was given for the data collectors as well as supervisors by researcher for a day just before and a day after the pretest. During data collection, each questionnaire was reviewed

and cross checked for completeness and consistency as well as made appropriate follow up on the procedures checking respondents whether they were free or not from any external influence when addressing their response to wards the instrument researchers wanted to measure (concurrent validity) by supervisor and researcher. And also, the researcher made appropriate selection of samples and appropriate designing of the sample size, then daily cleaning and double data entry was performed and all the necessary feedback gave to the data collectors immediately.

### **3.13 Data Processing and Analysis**

Before data entry, questionnaires were checked for completeness. The data was entered using Epi Data 3.1 and exported to SPSS windows version 24 for analysis. After observing the distribution of the data a descriptive analysis percentage and frequency were done on all the variables. The direction & strength of association was measured by OR with 95% CI. Bivariable analysis was done by using binary logistic regression and with  $P < 0.2$  multivariable analysis was done by using multinomial logistic regression for confounding factors. Multicollinearity was checked by using the covariate correlation matrix and by calculating the variance inflation factor (VIF)  $< 10$  and tolerance  $< 2$ . The fitness of logistic models was checked using Hosmer and Lemeshow static test. Data was analyzed in each imputed data set separately to obtain the effect estimates and standard errors. Odd Ration (OR) at 95% confidence interval (CI) was computed. All probability values less than 0.05 was considered being statistically significant.

### **3.14 Ethical Consideration**

Ethical clearance was obtained from Institutional Health Research Ethics Review Committee of the College of Health and Medical Sciences, Haramaya University. The ethical and supportive letters was submitted to Hiwot Fana Specialized teaching hospital administrator. Data collection was begun after informed, voluntary, written and signed consent was obtained from hospital administrators. After the purpose of the study was explained, informed, voluntary, written and signed consent was obtained from each of the study subjects. An interview was carried out privately in a separate room. Participants were informed that participation was on voluntary basis and they can withdraw at any time if they are not comfortable about the questionnaire. Names or personal identifiers were not included in the written questionnaires to ensure participants' confidentiality.

### **3.15 Dissemination Plan**

The results of the study with their respective discussions, interpretations and recommendations will be submitted and presented orally to the school of graduate study at Haramaya University, School of Medicine, Collage of Health and Medical Sciences, department of Internal Medicine as partial fulfillments of the Specialty certificate in Internal Medicine. Other copies will be sent for Harar Regional Health Bureau and Ministry of Health. The extract of the article will send to international journals for possible publication and present on scientific conference.

### **3.16 limitation of the study**

Cross-sectional nature of the study makes some variables less explanatory and cause-effect of relationships cannot be measured. Cross-sectional studies allow considering only at the point of foot care practice in the respondents and are hard to draw cause-effect connections.

## 4. RESULTS

### 4.1 Socio-Demographic Characteristics

A total of two hundred fourteen adult diabetic patients, who has been on follow up at endocrine clinic were included to this study with the response rate of 100%. The mean age of the respondents was 45 (SD  $\pm$  12.6) years and ranging from 21- 69 years. Majority, 61(28.5%) of the study participants were aged greater than 55 years. More than half, 117(54.7%) of them were males and, 125(58.4%) were living in urban area. Regarding to marital status, most of the study participants, 172(80.4%) were married and 29(13.6%) of them were single. Eighty-six study participants (40.2%) earn monthly income less than 1500 EBR and; about 68(31.8%) had attended primary education. Around one fourth 55(25.7%) of the participants were merchants (Table 1).

Table 1: Socio–demographic characteristics of Diabetic patients at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia, 2020

Variables	Frequency (percentage)
Mean age of the respondents	45.31(SD $\pm$ 12.6)
Age (Years)	
18-25	10(4.7)
26-35	49(22.9)
36-45	54(25.2)
46-55	40(18.7)
>55	61(28.5)
Sex	
Male	117(54.7)
Female	97(45.3)
Residence	
Urban	125(58.4)
Rural	89(41.6)
Marital status	
Single	29(13.6)
Married	172(80.4)
Divorced	5(2.3)

Widowed	8(3.7)
<b>Educational status</b>	
Can't read and write	61(28.5)
Can read and write	39(18.2)
Elementary (1-8)	68(31.8)
High school (9-12)	25(11.7)
College and above	21(9.8)
<b>Occupational status</b>	
Employed	24(11.2)
House wife	70(32.7)
Merchant	55(25.7)
Farmer	46(21.5)
Retired	14(6.5)
Student	5(2.3)
<b>Income ETB</b>	
Less than 1500	86(40.2)
1501-3000	68(32.8)
More than 3000	60(28)

#### **4.2 Knowledge of diabetic foot self-care**

Out of 214 study participants, 123 had good diabetic foot self-care knowledge, yielding an over prevalence of 123(57.5%). From total respondents nearly half 100(46.7%) of the diabetic patients had no awareness of foot should be inspected/checked every night and; about three fourth, 161 (75.2 %) of them did not know which part of the foot should be checked. Also, more half, 121 (56.5%) of the respondents did not know how frequent socks should be changed. Furthermore about, 142(66.4%) of diabetic patients did not know toenails should be cut straight across(Table 2).

Table 2: Frequency distribution of patient’s knowledge about diabetic foot self-care at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia, 2020

Knowledge question	Frequency (percentage)	
	Know	Don’t know
Awareness of foot should be inspected/checked every night	114(53.3)	100(46.7)
know which part of the foot should be checked	53(24.8)	161(75.2)
aware what should be looked for in foot	57(26.6)	157(73.4)
before washing the legs, should the temperature of water be checked	135(63.1)	79(36.9)
Feet should be completely dried after washing	160(74.8)	54(25.2)
If feel skin is dry and rough, lotion or cream be applied on it or not	170(79.4)	44(20.6)
DM patient lotion not to be applied in the interdigital spaces	42(19.6)	172(80.4)
Diabetic patient should avoid walking bare foot	191(89.3)	23(10.7)
wear comfortable shoes and avoid pointed-toed shoes	199(93.0)	15(7.0)
Diabetic patient receives advice/guidance when buy new shoes	38(17.8)	176(82.2)
Should inside shoes inspected for objects/torn lining before you put on	145(67.8)	69(32.2)
know how frequent Socks should be changed	93(43.5)	121(56.5)
know toenails should be cut straight across	72(33.6)	142(66.4)
Avoid removal of a callus or a wart by yourself at home	96(44.9)	118(55.1)
If you found redness/bleeding between your toes do you know what the first thing you do	103(48.1)	103(48.1)

### 4.3 Diabetic Foot Self-Care Practice

After 7 out of 29 items were selected from Nottingham Assessment of Functional Foot Care (NAFFC) and translated to Amharic (local) language and Afan oromo, the mean practice score is found to be  $27 \pm 7.466$  and each foot care practice had four options with assigned values ranges from 0 to 3. Among 214 study participants, 135 had good diabetic foot self-care practice, yielding an over prevalence of 135(63.1%). From these, 46(21.5%) them sometimes use moisturizing cream or lotion on their feet. However, about 185(86.4) of diabetic patients never consult their doctors before they buy new shoes and never check shoes before they put them on. Whereas, about,42(19.6%) of diabetic patients sometimes wear shoes without socks/stockings/tights and 82(38.3%) sometimes walk in the house and outside the house with bare feet (Table 3).

Table 3: Frequency distribution of patient’s practice of diabetic foot self-care at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia, 2020

Practice question	Frequency (percentage)			
	Often	Sometime	Rarely	Never
Use moisturizing cream/lotion on your feet	64(29.9)	100(46.7)	46(21.5)	4(1.9)
Consult your doctor before you buy new shoe	8(3.7)	6(2.8)	15(7.0)	185(86.4)
Check shoes before you put them on	8(3.7)	6(2.8)	15(7.0)	185(86.4)
Wear pointed-toed shoes	3(1.4)	58(27.1)	56(26.2)	97(45.3)
Wear shoes without socks/stockings/tights	8(3.7)	42(19.6)	48(22.4)	116(54.2)
Walk in the house barefoot	23(10.7)	82(38.3)	33(15.4)	76(35.5)
Walk outside the house bare feet	2(.9)	82(38.3)	34(15.9)	96(44.9)

#### 4.4 Factors Affecting Knowledge of Diabetic Foot Care

Multiple binary logistic regression analysis was run, considering those variables p value  $\leq 0.25$  at bivariate analysis. Factors associated with Knowledge of diabetic patients foot self-care was assessed in the current study. Accordingly, age, educational status, occupational status and income were identified as independent predictors significantly associated ( $P < 0.05$ ) with Knowledge of foot self-care among adult diabetic patients. Knowledge of foot self-care among adult diabetic patients who were in the age category of 36-45 years were 69.1% lower as compared to those who were more than 55 years old (AOR=0.309; 95% CI: 0.104,0.915). Moreover, participants who can’t read and write attended high school were 99.1% times less likely to have good knowledge of foot self as compared to those attended high school (AOR= 0.009; 95% CI: 0.001,0.123). Likewise, merchant adult diabetic patients were 95.66% less likely to have good knowledge of foot self-care as compared to those were student respondents (AOR= 0.044; 95% CI: 0.003, 0.697). Correspondingly adult diabetic patients get 1501-3000 EBR monthly income were 69.4% less likely to have good knowledge of foot self-care as compared to those had more than 300 EBR (AOR=0.306, 95% CI: 0.111,0.845) (Table 4).

Table 4: Multiple logistic regression of factors associated with knowledge of diabetic foot self-care at Hiwot Fana Specialized University Hospital, Harar, and Eastern Ethiopia, 2020

Expiatory variables	Knowledge of Foot care		COR(95% CI)	AOR(95%CI)	p-value
	Poor	Good			
<b>Age (Years)</b>					
18-25	8(3.7%)	2(0.9%)	242(.047,1.233)	<b>.016(.001,.469)*</b>	.016
26-35	28(13.1%)	21(9.8%)	.726(.341,1.546)	.369(120,1.133)	.081
36-45	35(16.4%)	19(8.9%)	.525(.248,1.113)	<b>.309(.104,.915)*</b>	.034
46-55	22(10.3%)	18(8.4%)	.792(.356,1.762)	<b>.314(.099,.995)*</b>	.049
>55	30(14.0%)	31(14.5%)	1		
<b>Sex</b>					
Male	74(34.6%)	43(20.1%)	.593(.343,1.026)	.686(.175,2.697)	.590
Female	49(22.9%)	48(22.4%)	1	1	
<b>Residence</b>					
Urban	51(23.8%)	74(34.6%)	6.145(3.24,11.627)	2.655(.991,7.111)	.052
Rural	72(33.6%)	17(7.9%)	1	1	
<b>Educational status</b>					
Can't read and write	51(23.8%)	10(4.7%)	.061(.018,.206)	<b>.009(.001,.123)*</b>	.000
Can read and write	23(10.7%)	16(7.5%)	.217(.066,.714)	<b>.018(.001,.264)*</b>	.003
Elementary (1-8)	36(16.8%)	32(15.0%)	.278(.091,.844)	<b>.036(.003,.397)*</b>	.007
High school (9-12)	8(3.7%)	17(7.9%)	.664(.179,2.460)	.270(.046,1.581)	.146
College and above	5(2.3%)	16(7.5%)	1	1	
<b>Occupational status</b>					
Employed	7(3.3%)	17(7.9%)	.607(.057,6.4)	<b>.009(.000,.361)*</b>	.012
House wife	39(18.2%)	31(14.5%)	.199(.021,1.869)	.074(.004,1.306)	.075
Merchant	28(13.1%)	27(12.6%)	.241(.025,2.297)	<b>.044(.003,.697)*</b>	.027
Farmer	41(19.2%)	5(2.3%)	.030(.003,.329)	<b>.020(.001,.418)*</b>	.012
Retired	7(3.3%)	7(3.3%)	.250(.022,2.836)	<b>.001(.000,.036)*</b>	.000
Student	1(0.5%)	4(1.9%)	1	1	

Income ETB					
Less than 1500	54(25.2%)	32(15.0%)	.368(.187,.727)	1.264(.445,3.590)	.660
1501-3000	46(21.5%)	22(10.3%)	.297(.144,.615)	<b>.306(.111,.845)*</b>	.022
More than 3000	23(10.7%)	37(17.3%)	1	1	

#### 4.5 Factors affecting practice of Diabetic Foot Care

Multiple binary logistic regression analysis was run, considering those variables p value  $\leq 0.25$  at bivariate analysis. Factors associated with practice of diabetic patients foot self-care was assessed in the current study. Consequently, age, sex, educational status and income were acknowledged as independent predictors significantly associated ( $P < 0.05$ ) with practice of foot self-care among adult diabetic patients. Practice of foot self-care among adult diabetic patients who were in the age category of 26-35 years were 72.4% lower as compared to those who were more than 55 years old (AOR= 0.276; 95% CI: .086,.884). Similarly, male adult diabetic patients were 90.1% less likely to have good practice of foot self-care as compared to females (AOR= 0.099, 95% CI: .026,.377). However, participants who have good knowledge of foot self-care were 2.33 times more likely to have good practice of foot self-care as compared those have poor knowledge of foot self-care (AOR= 2.335: 95% CI: 1.013,5.383). Moreover, participants who had attended high school were 6.6 times more likely to have good practice of foot self-care as compared those do not read and write (AOR= 6.630: 95% CI: 1.172,37.497). Congruently adult diabetic patients get 1501-3000 EBR monthly income were 3.36 times more likely to have good practice of foot self-care as compared to those had more than 3000 ETB (AOR= 3.363,95% CI: 1.213,9.320). (Table 5).

Table 5: Multiple logistic regression of factors associated with practice of diabetic foot self-care at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia, 2020

Expiatory variables	Practice of foot care		COR(95 CI)	AOR(95CI)	P-value
	Poor	Good			
<b>Age (Years)</b>					
18-25	6(2.8%)	4(1.9%)	1.028(.262,4.026)	1.279(.164,9.969)	.814
26-35	38(17.8%)	11(5.1%)	.446(.192,1.039)	<b>.276(.086,.884)</b>	.030
36-45	37(17.3%)	17(7.9%)	.708(.328,1.531)	.423(.140,1.279)	.128
46-55	17(7.9%)	23(10.7%)	2.086(.927,4.691)	1.506(.538,4.212)	.435
>55	37(17.3%)	24(11.2%)	1	1	
<b>Sex</b>					
Male	89(41.6%)	28(13.1%)	.284(.158,.508)	<b>.099(.026,.377)</b>	.001
Female	46(21.5%)	51(23.8%)	1		
<b>Knowledge</b>					
Good	71(33.2%)	52(24.3%)	1.736(.977,3.084)	<b>2.335(1.013,5.383)</b>	.047
Poor	64(29.9%)	27(12.6%)	1	1	
<b>Educational status</b>					
Can't read and write	33(15.4%)	28(13.1%)	1	<b>1</b>	
Can read and write	21(9.8%)	18(8.4%)	2.743(.838,8.973)	<b>61.910(5.746,667.01)</b>	.001
Elementary (1-8)	51(23.8%)	17(7.9%)	1.067(.340,3.350)	<b>11.999(1.399,102.87)</b>	.023
High school (9-12)	14(6.5%)	11(5.1%)	2.514(.701,9.020)	<b>6.630(1.172,37.497)</b>	.032
College and above	16(7.5%)	5(2.3%)	2.715(.883,8.350)	<b>59.134(5.304,659.27)</b>	.001
<b>Occupational status</b>					
Employed	14(6.5%)	10(4.7%)	.476(.067,3.396)	45.527(0.2535,817.78)	.060
House wife	33(15.4%)	37(17.3%)	.747(.118,4.752)	.373(.032,4.360)	.432
Merchant	42(19.6%)	13(6.1%)	.206(.031,1.372)	1.589(.156,16.197)	.696
Farmer	36(16.8%)	10(4.7%)	.185(.027,1.265)	.339(.032,3.544)	.366
Retired	8(3.7%)	6(2.8%)	.500(.063,3.998)	3.353(.138,81.308)	.457
<b>Income</b>					
Less than 1500 ETB	58(27.1%)	28(13.1%)	1	1	
1501-3000 ETB	33(15.4%)	35(16.4%)	2.917(1.386,6.138)	<b>3.363(1.213,9.320)</b>	.020

## 5. DISCUSSION

The current study assessed the level of knowledge and practice, and predictors of foot self-care among adult diabetic patients who has been on follow up at endocrine clinic at Hiwot Fana Specialized University Hospital. The study found that, an overall good knowledge and good practice of foot self-care was 57.5% and 63.1% respectively. The finding of prevalence of good knowledge of foot self-care in this current study is comparably the same to study conducted in Malaysia (58%) and lower than china(75%), however prevalence of good practice of foot self-care were comparably higher than that of Malaysia (32%) and lower than china (Muhammad-Lutfi *et al.* (2014). In this study age, educational status, occupational status and income were identified as independent predictors positively significantly associated ( $P < 0.05$ ) with Knowledge of foot self-care among adult diabetic patents. This finding is consistent with study done in north west Ethiopia (Awole and Yosief, 2014). Lack of formal education is significantly associated with poor knowledge and practice of foot care. In the current study, participants who can't read and write attended high school were 99.1% times less likely to have good knowledge of foot self as compared to those attended high school (AOR= 0.009; 95% CI: .001,.123). Also, the study revealed that; participants who had attended high school were 6.6 times more likely to have good practice of foot self-care as compared those do not read and write. This finding is comparably in agreement with study conducted in India and Nigeria (Hanu *et al.*, 2013, Safa *et al.*, 2019) .

Regarding the occupational status, merchant adult diabetic patients were 95.66% less likely to have good knowledge of foot self-care as compared to those were student respondents. The result is in line with the study conducted in Tanzania and Ethiopia (Faraja and Marina, 2015, Awole and Yosief, 2014).

The current study revealed that, aadult diabetic patients who get 1501-3000 EBR monthly income were 39.4% less likely to have good knowledge of foot self-care as compared to those had more than 300 EBR. Congruently, adult diabetic patients get 1501-3000 EBR monthly income were 3.36 times more likely to have good practice of foot self-care as compared to those had more than 300 EBR. This is consistent with study conducted in South Africa (Dikeukwu and Omole, 2013).

Factors associated with practice of diabetic patents foot self-care was assessed in the current study. Consequently, age, sex, educational status and income were acknowledged as independent predictors significantly associated ( $P < 0.05$ ) with practice of foot self-care among adult diabetic

patients. The finding of current study revealed that practice of foot self-care among adult diabetic patients who were in the age category of 26-35 years was 72.4% % lower as compared to those who were more than 55 years old. The probability of having good practice of foot self-care among adult diabetic patients was increased with age. Hence the result is in line with evidences investigated India and Nigeria (Hanu et al., 2013, Safa et al., 2019) .

Similarly, male adult diabetic patients were 90.1% less likely to have good practice of foot self-care as compared to females. However, participants who have good knowledge of foot self-care were 2.33 times more likely to have good practice of foot self-care as compared those have poor knowledge of foot self-care. The result is comparably consistent study done in India (Pinakin and Ashish, 2016). Moreover, participants who had attended high school were 6.6 times more likely to have good practice of foot self-care as compared those do not read and write. This finding is consistent with study conducted in Iran (Beiranvand and Fayazi, 2015). Congruently adult diabetic patients get 1501-3000 EBR monthly income were 3.36 times more likely to have good practice of foot self-care as compared to those had more than 3000 EBR. This is steady with study conducted in South Africa (Dikeukwu and Omole, 2013). Cross-sectional nature of the study makes some variables less explanatory and cause-effect of relationships cannot be measured. Cross-sectional studies allow considering only at the point of foot care practice in the respondents and are hard to draw cause-effect connections. Future study should examine the causal relationship of the variables using analytical study design. The issue of social desirability bias should also be considered in current study.

## **6. CONCLUSION AND RECOMMENDATION**

### **6.1 CONCLUSION**

Based on the finding, the study concludes that knowledge and practice of foot self-care among DM patents is low comparing an overall prevalence. Independent predictors include: age, educational status, occupational status and income were identified as factors positively significantly associated knowledge of foot self-care among adult diabetic patents. Likewise, independent variables include: age, sex, educational status and income were acknowledged as independent predictors significantly associated with practice of foot self-care among adult diabetic patents.

### **6.2 RECOMMENDATION**

#### **Hiwot Fana Specialized University Hospital**

Recommend that design, facilitate and strength awareness creation strategy for knowledge and practice of foot care among diabetic patients.

Should train and give direction to health care extension worker to strength and council on knowledge and practice of diabetic foot care

Should facilitate and strength the patient or any concerned body to form Diabetic Association

#### **Health Care Providers**

Recommend them to contribute to the efforts in improving the qualities of foot-care for diabetic patients.

Continuous education of knowledge and practice of diabetic foot care should be recommended

Should motivate the Diabetic patient on knowledge and practice of foot self-care

#### **For Policy makers**

Should contemplate in policy, strategy and guideline development on diabetic foot care.

#### **For Researcher**

For the advance research, this finding might benefit as input baseline

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## 8. APPENDICES

### Appendix 1- Information sheet and Consent form for Head of Hospital

My Name is ..... I am working as a data collector for the study being conducted in this Hospital by Dr. Hora yohanis, who is studying for Specialty certificate in Internal Medicine at Haramaya University, the College of Health and Medical science. I kindly request you to lend me your attention to explain you about the study and your Hiwot Fana Specialized University Hospital being selected as the study setting.

#### 1. The study/project title:

To assess the Knowledge and practice of foot self-care, and associated factor among adult Diabetic patients at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia.

#### 2. Purpose/aim of the study:

The results of this study can be of paramount importance to inform design of the diabetic care education intervention strategies in your Hospital to improve diabetic foot self-care among adult diabetic patient, thereby prevent diabetic foot disease in general. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfilment of Internal Medicine Specialty Certificate program for the principal investigator.

#### 3. Procedure and duration:

I will be interviewing the adult diabetic patient using a questionnaire to provide me with pertinent data that is helpful for the study. There are 37 questions to answer where I will fill the questionnaire by interviewing the participant. The interview will take about 20 minutes for each participant.

#### 4. Risks and benefits:

The risk of being participating in this study is very minimal, but only taking a few minutes from participant's time. There would not be any direct payment for being participating in the study. But the findings from this research may reveal important information for the local health planners.

#### 5. Confidentiality:

The information you will provide us will be confidential. There will be no information that will identify the participants in particular. A code number will identify every participant and no name

will be used. Participant's responses to any of the questions will not be given to anyone else and no reports of the study will ever identify them. The finding of the study will be general for the study participants will not reflect participant in particular. If a report of results is published, only information about the total group will appear. No reference will be made in oral or written report that could link individual participants to the research.

## **6. Rights:**

Participation for this study is fully voluntary. The participants have the right to declare to participate or not in this study. If they decide to participate, they have the right to withdraw from the study at any time and this will have no effect now or in the future on services that they or any member of their family may receive from the service providers. They do not have to answer any question that they do not want to answer. The Hospital has the right to stop this study from being conducted if any misdeeds and unethical procedures are observed during the data collection process in the hospital's premises.

**7. Contact address:** If there are any questions or enquires any time about the study or the procedures, please contact: +251- 911759717 at mobile phone, email [horaadhaam@gmail.com](mailto:horaadhaam@gmail.com); as well as contact Institutional Health Research Ethics Review Committee (IHRERC) at office phone 025-4662011 or P.O.Box 235, Harar, Ethiopia.

## **8. Declaration of Informed Voluntary Consent**

I have read the participant information sheet. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that participant have the right to withdraw from the study at any time or not to answer any question that they do not want. I am also informed that the Hospital has the right to stop this study from being conducted if any misdeeds and unethical procedures are observed during the data collection process in the hospital's premises. Therefore, I declare my voluntary consent on behalf of Hiwot Fana specialized University hospital management to allow this study to be conducted in the Hospital with my initials (Signature) as indicated below.

Name and Signature of Hospital Administrator: \_\_\_\_\_ Date \_\_\_\_\_

Name and Signature of Data Collector: \_\_\_\_\_ Date \_\_\_\_\_

## **Appendix 2- Participant information sheet and consent form**

My Name is ..... I am working as a data collector for the study conducted being conducted in this Hospital by Dr Hora yohannes, who is studying for Specialty certificate in Internal Medicine at Haramaya University, the College of Health and Medical science. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

### **1. The study/project title:**

To assess the Knowledge and practice of foot self-care, and associated factor among adult Diabetic patients at Hiwot Fana Specialized University Hospital, Harar, Eastern Ethiopia.

### **2. Purpose/aim of the study:**

The results of this study can be of paramount importance to inform design of the diabetic care education intervention strategies to improve diabetic foot self-care among adult diabetic patient at Hiwot Fana specialized University hospital, thereby prevent diabetic foot disease in general. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfilment of Internal Medicine Specialty Certificate program for the principal investigator.

### **3. Procedure and duration:**

I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. There are 37 questions to answer where I will fill the questionnaire by interviewing you. The interview will take about 20 minutes, so I kindly request you to spare me this time for the interview.

### **4. Risks and benefits:**

The risk of being participating in this study is very minimal, but only taking a few minutes from your time. There would not be any direct payment for being participating in the study. But the findings from this research may reveal important information for the local health planners.

### **5. Confidentiality:**

The information you will provide us will be confidential. There will be no information that will identify you in particular. A code number will identify every participant and no name will be used.

Your responses to any of the questions will not be given to anyone else and no reports of the study will ever identify you. The finding of the study will be general for the study participants will not reflect you in particular of individual persons. If a report of results is published, only information about the total group will appear. No reference will be made in oral or written report that could link individual participants to the research.

**6. Rights:**

Participation for this study is fully voluntary. You have the right to declare to participate or not in this study. If you decide to participate, you have the right to withdraw from the study at any time and this will have no effect now or in the future on services that you or any member of your family may receive from the service providers. If you do agree now, you can change your mind at any time and not take part in the research. You do not have to answer any question that you do not want to answer.

**7. Contact address:**

If there are any questions or enquires any time about the study or the procedures, please contact: +251- 911759717 at mobile phone, email [horaadhaam@gmail.com](mailto:horaadhaam@gmail.com); as well as contact Institutional Health Research Ethics Review Committee (IHRERC) at office phone 025-4662011 or P.O.Box 235, Harar, Ethiopia.

**8. Declaration of Informed Voluntary Consent**

I have read/was read to me/ the participant information sheet. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that they do not want. Therefore, I declare my voluntary consent to participate in this study with my initials (Signature) as indicated below.

Name and Signature of participants: \_\_\_\_\_Date \_\_\_\_\_

Name and Signature of Data Collector: \_\_\_\_\_Date \_\_\_\_\_

**Thank you for your cooperation!!!**

### Appendix 3- English version Questionnaire

Name of data collector-----date-----code No.-----

#### SECTION A: Socio-Demographic Characteristics

In this part I am going to ask you about back-ground information related to you (Place (✓) on box in front)		
Q1	Sex (record sex as observe)	<input type="checkbox"/> Male <input type="checkbox"/> Female
Q2	How old are you? (Age in years)	-----years      If age unknown go to Q3
Q3	Could you tell me the age range if I read the different options to you? (read the options to the respondent)	<input type="checkbox"/> 18-29 <input type="checkbox"/> 30- 59 <input type="checkbox"/> >60
Q4	Do you live in an urban or rural area? (Area of residence)	<input type="checkbox"/> Urban <input type="checkbox"/> Rural
Q5	Current Marital Status	<input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed
Q6	Educational Status	<input type="checkbox"/> Cannot read <input type="checkbox"/> Able to read <input type="checkbox"/> 1-8 grade <input type="checkbox"/> 9-12 grade <input type="checkbox"/> College & above
Q7	Occupational Status	<input type="checkbox"/> Employed <input type="checkbox"/> Merchant <input type="checkbox"/> Housewife <input type="checkbox"/> Farmer <input type="checkbox"/> Retired <input type="checkbox"/> Other-----
Q8	Average Monthly income	----- ETB

**SECTION B: Clinical characteristics and health care related factor**

<b>In this part I am going to ask you clinical characteristics and health care system related knowledge to you (Encircle (○) on number in front)</b>		
Q1	Type of diabetes (you can observe medical card and record type as observed)	<ol style="list-style-type: none"> <li>1. Type 1</li> <li>2. Type 2</li> </ol>
Q2	When your diabetes was first diagnosed?	<ol style="list-style-type: none"> <li>1. &lt; 5 years</li> <li>2. 5- 10 years</li> <li>3. &gt; 10 years</li> </ol>
Q3	Type of Diabetic Medication/treatment	<ol style="list-style-type: none"> <li>1. Oral hypoglycemic</li> <li>2. Insulin</li> <li>3. Combination of Oral hypoglycemics and Insulin</li> </ol>
Q4	Previous history of Diabetic foot disease/ulcer	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
Q5	Family history of diabetics	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
Q6	Have you received advice/education on foot care?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
Q7	Has your doctor or another health professional ever examined your feet?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I cannot recall</li> </ol>

**SECTION C: knowledge of diabetic foot self-care Questioners**

In this part I am going to ask you about Knowledge of foot care related to you		Place (✓) in column	
		Yes (1)	No (0)
Q1	Do you aware that foot should be inspected/checked every night?		
Q2	Do you know which part of the foot should be checked?		
Q3	Do you aware what should be looked for in foot?		
Q4	Do you know before cleaning the legs, should the temperature of water be checked?		
Q5	Feet should be completely dried after washing?		
Q6	If you feel skin is dry and rough, should lotion or cream be applied on it or not?		
Q7	For DM patient lotion not to be applied in the interdigital spaces		
Q8	Diabetic patient should avoid walking bare foot		
Q9	Do you wear comfortable shoes and avoid pointed-toed shoes		
Q10	Diabetic patient should receive advice/guidance when buy new shoes?		
Q11	Do you inspect the inside of your footwear for objects or torn lining before you put on?		
Q12	Do you know how frequent Socks should be changed?		
Q13	Do you know toenails should be cut straight across		
Q14	Do you avoid removal of a callus or a wart by yourself at home		
Q15	If you found redness/bleeding between your toes do you know what the first thing you do		

**SECTION D: Practice of diabetic foot self-care questioners**

In this part I am going to ask you Practice of self-foot care related to you (Place (✓) in the box)		
Q1	Do you use moisturizing cream or lotion on your feet?	<input type="checkbox"/> Often (3) <input type="checkbox"/> Sometimes (2) <input type="checkbox"/> Rarely (2) <input type="checkbox"/> Never (0)
Q2	Do you consult your doctor before you buy new shoes?	<input type="checkbox"/> Often (3) <input type="checkbox"/> Sometimes (2) <input type="checkbox"/> Rarely (1) <input type="checkbox"/> Never (0)
Q3	Do you check your shoes before you put them on?	<input type="checkbox"/> Often (3) <input type="checkbox"/> Sometimes (2) <input type="checkbox"/> Rarely (1) <input type="checkbox"/> Never (0)
Q4	Do you wear pointed-toed shoes?	<input type="checkbox"/> Most of the time (0) <input type="checkbox"/> Sometimes (1) <input type="checkbox"/> Rarely (2) <input type="checkbox"/> Never (3)
Q5	Do you wear shoes without socks/stockings/tights?	<input type="checkbox"/> Often (0) <input type="checkbox"/> Sometimes (1) <input type="checkbox"/> Rarely (2) <input type="checkbox"/> Never (3)
Q6	Do you walk in the house barefoot?	<input type="checkbox"/> Often (0) <input type="checkbox"/> Sometimes (1) <input type="checkbox"/> Rarely (2) <input type="checkbox"/> Never (3)
Q7	Do you walk outside the house bare feet?	<input type="checkbox"/> Often (0) <input type="checkbox"/> Sometimes (1) <input type="checkbox"/> Rarely (2) <input type="checkbox"/> Never (3)

## **Appendix 4- Afan Oromo Version Participant Information Sheet and consent form**

Maqaan koo \_\_\_\_\_ jedhama. Hojiin koo qorataa Kolleejjii Saayinsii Fayyaa Univarsiitii Haramayaa kan ta’an Dr.Hora Yohaannes qorannoo isaa hospitaala kana keessatti gaggeessuuf ragaa walitti qabuudha. Kayyoo qorannichaa fi hirmaattota qorannichaa irraa maal akka eegamu yeroon isiniif ibsu xiyyeeffannaan akka na dhaggeeffattan kabajaan isin gaafadha.

### **1. Mata duree qorannoo**

Beekumsaa fi dandeettii kunuunsa miillaa fi wantoota isaan walqabatan, dhukkubsattoonni dhibee sukkaaraa miila isaaniif qaban warra hordoffii Hospitaala Hiwoot faanaatti, Harar, Etiyoophiyaatti qaban, bara 2020 kan gaggeffamudha.

### **2. Kaayyoo qorannichaa**

Kaayyoonnsaa argannoo qorannoo kanaa hospitaali hiwoot faanaa fi waajjirri fayyaa bu’uurrefatee tajaajilli si’ataan akka kennamu kallatii kaa’uuf gargaara. Kanaan alattis, qorataan qo’annoo kanaa digrii lammaffaa isaa Dhibee Keessaa (Internal Medicine) fudhachuuf uulaagaa isa barbaachisu guuttachuuf isa gargaara. .

### **3. Adeemsaa fi turmaata**

Gaaffii fi deebii qo’annichaaf qopha’an gaafachuufi deebisuun kan gaggeeffamu yoo tahu Yeroon isinittii fudhatu daqiiqaa 20 hin caalu.

### **4. Miidhaa fi faayidaa**

Rakkinni qo’annoo kana keessatti hirmaachuu keessaniin isin quunnamu baay’ee xiqqaa kan t’eedha. innis yeroo keessan muraasa, daqiiqaa 20 qofaa fudhachuu taha. Qo’annoo kana irratti hirmaachuu keessaniin kaffaltiin kaffalamu tokko iyyuu hin jiru. Garuu bu’aan qo’annoo kanaa ragaawwan haarawaa naannoo keessaniifi qooda fudhattoota kan biroof ni argamiisa.

### **5. Iccitii eeguu**

Odeeffannoon nutti himtan hundi icciitiin kan eegamuu fi argannoon qo’annaa kanaa hawaasa qo’annaa kana irratti hirmaatan akka walii galaatti kan ibsu yoo tahu, karaa kamiinuu dhimma nama dhunfaa hin calaqqisiisu. lakkoofsa qorannoo addaa isiniif kenname malee maqaa keessan

waan hin fayyadamneef odeeffannoo nuti ykn qaamonni nuu wajjin hojjetan irratti maqaan keessan hin maxxanfamu. Odeeffannoo eenyummaa keessan ibsu hin fayyadamnu. Qaamni odeeffannoo kana qorannoodhaaf fayyadamu kam iyyuu haal dureewwan waraqaa kanarra jiran hordofuu qaba.

## **6. Mirga hirmatoota qorannichaa**

Hirmaannaan keessan guutummaa guutuutti fedhii irratti kan hundaa'e. Mirga hirmaachuu fi hirmaachuu dhiisuu ni qabdu. Yoo hirmaattan, mirga yeroo barbaaddanitti qo'annoo keessaa bahuu fi Gaaffii deebisuu hin barbaadne dhiisuu ni qabdu. Kana gochuu keessaniifis faayidaan isiin yookiin maatiin keessan argachuu qabdani dhabdan hin jiru.

## **7. Teessoo .**

Gaaffii kamiyyuu yoo qabaattan yookiin adeemsa qorannoo irratti wanti ifa isiniif hin taane yoo jiraate, maaloo teessoo kanaan nu qunnamaa:

**Qo'ataa muummee:** Horaa Yohaannis ,Lakk. bilbila: 0911759717/0910287322/I-meeyilii: **horaadhaam@gmail.com** **Dhaabbataicha:**-Haramay yuniversity, Waajjira dhimma naamusaa qo'annaa fayyaa dhaabbatichaa (IHRERC) lakk. Bilbilaa 025-466-20-11, lakk.Poostaa 235, Harar

## **8. Ibsa walii galtee fedhii irratti hundaa'ee**

Qorannoon kun dubbisee yookiin naaf ibsamee jira. Wantootan dubbisee ykn naaf dubbifame hunda hubadheen jira. Gaaffii kootifis deebiin haalaan naaf kennamee jira. Kaayyoo qorannoo kanaa, adeemsa isaa, faayidaa fi miidhaa inni qabu, iccittummaa isaa,mirga hirmaattotaa fi teessoowwan yeroon yaada naaf ifa hin taane qabaadhu itti fayyadamu hubadheen jira. Wanta naaf ifa hin taane hunda gaafachuuf carraan naaf kennamee jira. Yeroon barbaadetti hirmaannaa koo dhaabuu fi gaaffiin deebisuu hin barbaanne deebisuu dhiisuu akkan danda`u natti himameera. Qorannoo kana irratti hirmachuuf walii galuu koo mallattoon nan mirkaneessaa.

Maqaa fi mallattoo hirmaataa: \_\_\_\_\_Guyyaa\_\_\_\_\_

Maqaa fi mallattoo ragaa walitti qabaa : \_\_\_\_\_Guyyaa: \_\_\_\_\_

Hirmaannaa fi gargaarsa keessaniif Galatoomaa !

## Appendix 5- Afaan Oromo version of Questionnaire

Gaffiiwan qoa'anno beekumsaa fi dandeettii kunuunsa miillaa dhibee sukkaaraa

Maqaa fi mallattoo data funaana/tuu-----Guyya -----/-----/-----Kodii gaffii-----

### Kutaa 1: Gaaffiilee hawwaasummaa fi haala jireenyaa ilalalatan

Gaaffiilee hawwaasummaa fi haala jireenyaa ilalalatan isin Gaafadhu (mallattoo (✓) saanduqarra godhi )	
G1	Saala (Ijaan ilaalii galmeessii) <input type="checkbox"/> Dhiira <input type="checkbox"/> Dhalaa
G2	Umurii <input type="checkbox"/> Waggaa----- <input type="checkbox"/> Yoo hin beekne gara G3 deemi
G3	Yoon filannoo siif dhiyeesse umiriinke meeqaa hanga meeqaa akka tahe natti himuu dandeessaa?(Filannoo dubbisiif) <input type="checkbox"/> 18-29 <input type="checkbox"/> 30- 59 <input type="checkbox"/> >60
G4	Bakka jireenyaa <input type="checkbox"/> Magaala <input type="checkbox"/> Baadiyyaa
G5	Haala gaa'elaa yeroo ammaa <input type="checkbox"/> Kan hin fuune/heerumne <input type="checkbox"/> Kan fuudhe/heerumte <input type="checkbox"/> kan wal hiikan <input type="checkbox"/> kan jalaa du'e/duute <input type="checkbox"/> adda adda kan jiraatan
G6	Sadarkaa Barumsaa <input type="checkbox"/> Dubbisuu hin danda'a/eessu <input type="checkbox"/> Dubbisuu ni danda'a/eessi <input type="checkbox"/> kutaa 1-8 <input type="checkbox"/> kutaa 9-12 <input type="checkbox"/> Colleegii fi isaa ol
G7	Gita Hojii <input type="checkbox"/> Miindeffamaa <input type="checkbox"/> Daldalaa <input type="checkbox"/> Qotee bulaa <input type="checkbox"/> haadhamana <input type="checkbox"/> Soorama kan ba'e <input type="checkbox"/> kan biroo
G8	Galii Baatii <input type="checkbox"/> qarshii -----

**Kutaa 2: dhibee sukkaaraa fi Tajaajila mana yaalaa waliin kan wal-qabatu**

<b>Amma waa'ee dhibee sukkaaraa fi Tajaajila mana yaalaa keessanii waliin walqabatee kan isin illallatun isin gaafadha ( mallattoo (○) lakkoofsarra mari)</b>		
G1	Gosa dhibee sukkaaraa (kaardii galmee irra ilaalii guuti)	1. Gosa 1 2. Gosa 2
G2	Dhibee sukkaaraan erga qabamanii waggaa meeqa?	1. waggaa 5 gadi 2. waggaa 5- 10 3. waggaa 10 ol
G3	Dawwaa gosa kam fudhachaa jirtu?	1. Kan liqimfamu 2. Lilmeen kan kennamu(Insuuliinii) 3. Lamaanuu (kan liqimfamuu fi insuuliinii)
G4	Dhibbee sukkaaraan kan walqabate dhibee miilarra gahu si qunnamee beekaa?	1. Eeyyee 2. Lakki
G5	Maatii keessan keessa dhibbee kan qabu jiraa?	1. Eeyyee 2. Lakki
G6	Barumsa/gorsa kunuunsa fayyaa miilaaf godhamu ogeessa fayyaarraa/dookteriirraa argattee beektaa?	1. Eeyyee 2. Lakki
G7	Hanga ammaatti ogeessi foyyaa/doctorri qorannoo miillaa siif godhee beekaa?	1. Eeyyee 2. No 3. Hin yaaadadhu

**kutaa 3: Gaaffiiwwan beekumsa kunuunsa miilaa dhibee sukkaaraa**

Amma waa'ee beekumsa kunuunsa miilaa dhibee sukkaaraan isin gaafadha		Malatoo (✓) kaa'i	
		Eeyyee (1)	Lakki (0)
G1	Miilli galgala galgala yeroo hundaa ilaalamuu akka qabu ni beektaa ?		
G2	Kutaa miilaa kam kamtu akka ilaalamu ni beektaa?		
G3	Miilarra maal maaltu akka ilaalamuhoo ni beektaa?		
G4	Bishaan miila ittin dhiqannu ho'a akkamii akka qabbaachuu qabu beektaa ?		
G5	Erga dhiqannee booda jiidha miilarraa gogsuu akka qabnu beektaa?		
G6	Yoo gogaan miila kee gogge tahe dibata ykn looshinii dibachuu akka qabdu beektaa?		
G7	Dhibee sukkaaraa namni qabu dibata/looshinii qubaa miillaa jiddu jidduu dibuu akka hin qabne beektaa?		
G8	Dhibee sukkaaraa kan qaban kophee osoo hin godhatiin/miila duwwaa deemuu akka hin qabne beektaa?		
G9	Yeroo hunda kophee miilaaf mijataa godhattaa ?		
G10	Kophee bituun dura gorsi ogeessa fayyaa akka barbaachisu beektaa?		
G11	Kophee osoo hin godhatiin dura keessoo isaa ilaaluu fi harkaanis tuttuqnee mirkaneessuu akka qabnu beektaa?		
G12	Kaalsiin miilaa guyyaa meeqa meeqaan jijjiramuu akka qabu beektaa?		
G13	Dhibee sukkaaraa kan qaban <b>Qeensaa miilaa</b> akkamitti akka muruu qaban ni beektuu?		
G14	Dhiitni xixiqqoo miilarratti yoo bahe ofii akka ofirraa hin murre beektuu?		
Q15	Miilaarraa fi quba jidduu bakka diimatu/dhiigu yoo argite <b>duraan dursa</b> maal akka gootu ni beektaa?		

**kutaa 4: Gaaffiilee dandeettii kunuunsa miilaa dhibee sukkaaraa**

<b>Ammaa dandeettii kunuunsa miilaa dhibee sukkaaraa kan ilaallatun isin gaafadha.</b>		
<b>(mallattoo (✓) saanduqarra kaa'i)</b>		
G1	Jiidhina miilaa eeguuf dibata/looshinii miilarra ni dibattaa?	<input type="checkbox"/> Guyyuu (3) <input type="checkbox"/> Darbeedarbee (2) <input type="checkbox"/> Tasa (1) <input type="checkbox"/> Gonkuma(0)
G2	Kophee haaraa yeroo bituuf karoorsitu ogeessa fayyaa ni gaafattaa ykn ni mariisiftaa?	<input type="checkbox"/> yeroo mara (3) <input type="checkbox"/> Darbeedarbee (2) <input type="checkbox"/> Tasa (1) <input type="checkbox"/> Gonkuma (0)
G3	Kophee osoo hin godhatiin dura keessoo isaa ni ilaaltuu?	<input type="checkbox"/> Guyyuu (3) <input type="checkbox"/> Darbeedarbee (2) <input type="checkbox"/> Tasa (1) <input type="checkbox"/> Gonkuma(0)
G4	Kophee fuuldurri dhiphoo taate ni godhattaa ?	<input type="checkbox"/> Guyyuu (0) <input type="checkbox"/> Darbeedarbee (1) <input type="checkbox"/> Tasa (2) <input type="checkbox"/> Gonkuma (3)
G5	Kophee kaalsii malee ni godhattaa?	<input type="checkbox"/> Guyyuu (0) <input type="checkbox"/> Darbeedarbee (1) <input type="checkbox"/> Tasa (2) <input type="checkbox"/> Gonkuma (3)
G6	Kophee osoo hin godhatiin ala baatee ni deemtaa?	<input type="checkbox"/> Guyyuu (0) <input type="checkbox"/> Darbeedarbee (1) <input type="checkbox"/> Tasa (2) <input type="checkbox"/> Gonkuma (3)
G7	Kophee osoo hin godhatiin mana keessa ni deemtaa?	<input type="checkbox"/> Guyyuu (0) <input type="checkbox"/> Darbeedarbee (1) <input type="checkbox"/> Tasa (2) <input type="checkbox"/> Gonkuma (3)

**Appendix 6- Amharic Version Participant Information Sheet and Consent form**

ስሜ \_\_\_\_\_ እባላለሁ።አሁን እየሰራሁ ያለሁት በሂወት ፋና ስፔሻላይዝድ ሆስፒታል ዉስጥ በዶ/ር ሆራ ዮሐንስ (የሀረማያ ዩንቨርሲቲ ጤናና ህክምና ሳይንስ ኮሌጅ ሁለተኛ ድግሪውን በውስጥ ዳዌ የሚያጠናው በሚመራዉ ጥናት ላይ መረጃ ሰብሳቢ ሆኜ ነዉ። ስለዚህ ስለ ጥናቱ እና ለጥናቱ እንዴት እንደተመረጡ አንድገልጽሎት አትኩሮት እንዲሰጡኝ በትህትና እጠይቃለሁ።

**1. የጥናቱ/የፕሮጀክቱ ርዕስ**

በአትዮጵያ በሐራማያ ዩንቨርሲቲ ህዎት ፋና ሆስፒታል በሐረር ከተማ በ 2013 ዓ.ም ከሚመጡ የስኳር ህመማን መካከል የእግር እንክብካቤ እውቀት እና ትግበራን በተመለከተ ዳሰሳ ለማድረግ

**2.. የጥናቱ ዓላማ**

ዓላማው ከጥናቱ በሚገኘው ውጤት መሰረት ሆስፒታሉ እና ጤና ቢሮ የእግር እንክብካቤ መመርያ እንድያዘጋጁ ይረዳናል። ሌላዉ ዓላማ በውስጥ ዳዌ ዘርፍ የሁለተኛ ዲግሪ የመመሪቂያ ጽሁፍ ለማዘጋጀት ይጠቅመዋል።

**3. የጥናቱ ሂደትና የሚወሰደው ጊዜ**

የጥናቱ ሂደት በጥያቄና መልስ የምከናወን ሲሆን መጠይቁ 37 ጥያቄዎችን ይዘታል። በጥያቄና መልስ 20 ደቂቃዎች ዎስጥ የምከናወን ይሆናል።

**4. ጥቅምና ጉዳት**

በጥናቱ መሳተፍ ምንም የሚያመተዉ ጉዳት የለም። በዚጥናት በመሳተፋችሁ የርሰዎን የተወሰነ 20 ደቂቃዎች ከመሻማት በቀር የሚደርስባቸ ምንም አይነት ጉዳት የለም። ለተጠያቂው ቀጥታ የሆነ ጥቅም የለውም ነገር ግን ከጥናቱ በሚገኘው ውጤት መሰረት በማድለግ ህብረተሰቡን ለውደፊት ተጠቃሚ ያደርጋል።

**5. ሚስጥር አጠባበቅ/ሚስጥራዊነት**

የሚሰጡት መረጃ ምስጢራዊነቱ የተጠበቀነዉ። በመጠይቁም ዉስጥ የርሰዎን ማንነት በተለየ ሁኔታ የሚጠይቅ ጥያቄ የለም። የጥናቱም ዉጤት ጥናቱ ለተካሄደበት አካባቢ ጠቅለል ያለ መረጃ የሚሰጥ ሲሆን የአንድን ግለሰብ ወይንም ቤት ማንነት የሚያንጸባርቅ አይደለም። ጥናቱም በምንም ዓይነት መልኩ በቃልም ይሁን በጽሁፍ የጥናቱን ተሳታፊ ማንነት በሚያሳዉቅ ሁኔታ ምሳሌ አድርጎ አያቀርብም። በጥናቱ ሂደት የዚህ ጥናት መረጃዎች ከእርሶ ስም ይልቅ የጥናቱን መለያ ቁጥር እንጠቀማለን። የእርሶም ስም በማንኛዉም ከዚህ ጥናት ጋር በተያየዘ በአጋሮቻችን በሚታተሙ መረጃዎች ላይ አይወጣም። ተመራማሪዎች ብቻ ለጥናታቸዉ አስፈላጊና መጠነኛ መረጃዎችን መጠቀም ሲችሉ የእርሶን ማንነት ሊገልፁ የሚችሉ ማናቸዉም መረጃዎች የተጠበቁ ናቸዉ።ማንኛዉም ከዚህ ጥናት መረጃ የሚጠቀም ግለሰብ በጥናት ዉስጥ የተቀመጡትን መስፈርቶች የሚከተል ይሆናል።

**6. የተሳታፊው መብት**

በዚህ ጥናት ውስጥ መሳተፍ በእርሶ ፍቃደኝነት ላይ የተመሠረተ ነው። በጥናቱ ላይ የመሳተፍ ወይም ያለመሳተፍ እንዲሁም ያልገባችሁን የመጠየቅ ሙሉ መብት አላችሁ። በጥናቱ ቢሳተፉም ባይሳተፉም ማግኘት የሚገባዎትን የህክምና አገልግሎት ያገኛሉ።አሁን በጥናቱ ለመሳተፍ ቢስማሙም በማንኛውም ሰዓት ሃሳብን መቀየር ወይም ያለመሳተፍ ይችላሉ።ይህም ለእርሶ በሚደረገው እንኩብካቤ ላይ አሁንም ሆነ ወደፊት ምንም አይነት አሉታዊ ተፅዕኖ አይኖረውም።

**7. አድራሻ**

ስለ ጥናቱ ወይም ስለጥናቱ አካሄድ ማንኛውም ጥያቄ ቢኖሮት በሚከተለው አድራሻ ይጠቀሙ

የዋና መርማሪ ስም: ዶ/ር ሆራ ሮሃንስ ስልክ: 09-11-75-97-17 ኢ. ሜይል: [horaadhaam@gmail.com](mailto:horaadhaam@gmail.com)

እንደ አንድ የጥናት ተሳታፊ በአግባቡ ካልተስተናገዱ ወይም በጥናቱ ምክንያት ጉዳት ከደረሰበት ወይም ሌሎች ከመብትዎ ጋር የተያያዙ ጥያቄዎች ካለዎት እባክዎን በሚከተለው አድራሻ ይጠቀሙ

የጤና ተቋም ምርመር ስነ-ምግባር አጣሪ ኮሚቴ

ፖ/ሳ/ቁ 235 ስልክ 025-4662011 ሐረር

**8. በፍቃደኝነት ላይ የተመሰረተ የሥምምነት ማረጋገጫ**

ስለ ጥናቱ ተብራርቶልኛል ያነበብኩትን (የተነበበልኝን) በሙሉ ተረድቻለሁ ጥያቄዎቼም በአጥጋቢ ሁኔታ ተመልሰውልኛል የተሳታፊዎች የመረጃ ቅፁን አንብቤዋለሁ ወይም ተነበልኛል የጥናቱን ዓላማ፣ አካሄድ ያለውን ጉዳትና ጥቅም፣ ሚስጥራዊነት፣የመሳተፍና ያለመሳተፍ መብት እና ለማንኛውም ጥያቄ ከማን ጋር መነጋገር እንደምችል ተረድቻለሁ።ጥያቄ ካለኝ መጠየቅ እንድችል እድል ተሰቶኛል በማንኛውም ጊዜ ጥናቱን ማቋረጥ ብፈልግ የማቋረጥ መብት እንዳለኝና መመልስ የማልፈልገውን ጥያቄ አለመመለስ እንደምችል ጭምር ተረድቻለሁ።

ስለዚህ ለመሳተፍ ፍቃደኛ መሆኔን በፊርማዬ አረጋግጣለሁ።

- የተሳታፊዎ ስምና ፊርማ \_\_\_\_\_ ቀን \_\_\_\_\_
- የመረጃ ስብሰባው ስም ና ፊርማ \_\_\_\_\_ ቀን \_\_\_\_\_
  - ስለተሳትፎዎ በጣም እናመሰግናለን

**Appendix 7- Amharic version of Questionnaire**

መረጃ ሰብሳቢዉ ሥምና ፊርማ-----ቀን -----/-----/-----

የጥያቄዉ መለያ ቁጥር -----

**ክፍል 1 : ማህበራዊ እና ሥነ-ህዝባዊ ጉዳዮችን የሚመለከቱ ጥያቄዎች**

አሁን ስለ ማህበራዊ እና ህዝባዊ ጉዳዮችን የሚመለከቱ ጥያቄዎችን እጠይቆታለሁ ((✓) ሳጥን ላይ ያስቀምጡ)			
ቁ1	ጾታ	<input type="checkbox"/> ወንድ	<input type="checkbox"/> ሰት
ቁ2	እድሜ	-----ዓ.ም	ካለወቁ ወደ ጥያቄ ቀጥሮ 3 ዝለል
ቁ3	የምመጥንዎትን የዕድሜ ክልል ይንገሩኝ	<input type="checkbox"/> 18-29	<input type="checkbox"/> 30- 59 <input type="checkbox"/> >60
ቁ4	የመኖሪያ ስፍራ	<input type="checkbox"/> ከተማ	<input type="checkbox"/> ገጠር
ቁ5	የጋብቻ ሁኔታ	<input type="checkbox"/> ያገባ	<input type="checkbox"/> ያላገባ
		<input type="checkbox"/> የተፋታ	<input type="checkbox"/> የትዳር አጋር የሞተበ/ባት
ቁ6	የትምህርት ደረጃ	<input type="checkbox"/> ማንበብና መጻፍ የማይችል <input type="checkbox"/> ማንበብና መጻፍ የምችል <input type="checkbox"/> የአንደኛ ደረጃ ትምህርት (1-8) <input type="checkbox"/> የሁለተኛ ደረጃ ትምህርት (9-12) <input type="checkbox"/> የኮሌጅ ትምህርት ወይም ከዚያ በላይ	
ቁ7	ስራ	<input type="checkbox"/> ተቀጣሪ <input type="checkbox"/> ነጋዴ <input type="checkbox"/> አርሶ አደር <input type="checkbox"/> የቤት እመቤት <input type="checkbox"/> ጡረታ የወጣ <input type="checkbox"/> ሌላ (ይገለጽ).....	
ቁ8	ወርሃዊ ገቢ	-----ብር	

**ክፍል 2 : ስለ ስኬር ህመም ታሪክ መረጃ**

አሁን ስለ ስኬር ህመም ታሪክ መረጃ የሚመለከቱ ጥያቄዎችን እጠይቆታለሁ ( (○) ያክብቡበት)		
ቁ1	የትኛው አይነት የስኬር ህመም አለብዎ ?	1. አንደኛው አይነት 2. ሁለተኛው አይነት
ቁ2	የስስኬር ህመም አንዳለብዎ ለመጀመሪያ ጊዜ ያወቁት መቼነው ?	1 ከ 5 ዓመት በታች 2 ከ 5- 10 ዓመት 3 ከ 10 ዓመት በላይ
ቁ3	የትኛውን የስኬር ህመም መቋጣጠሪያ ይወስዳሉ ?	1 በመርፌ የሚሰጠውን 2 በኪኒን የሚሰጠውን 3 ሁለቱንም አይነት
ቁ4	ስስኬር ህመም ጋር የተያያዘ የእግር ህመም/ቁስል አጋጥመዎት ያውቃል ?	1 አዎ 2 አይ
ቁ5	በቤተሰብዎ ውስጥ የስኬር ህመም ያለው አለ ?	1 አዎ 2 አይ
ቁ6	ስስኬር ህመም ጋር በተያያዘ የጤና ትምህርት አግኝተው ያውቃሉ ?	1 አዎ 2 አይ
ቁ7	አግሮት በጤና ባለሙያ ተመርምሮ ያውቃል ?	1 አዎ 2 አይ 3 አላስታውሰሁም

**ክፍል 3 : የእግር እንክብካቤ እውቀትን የሚመለከቱ ጥያቄዎች**

አሁን ስለ የእግር እንክብካቤ እውቀትን የሚመለከቱ ጥያቄዎችን እጠይቆታለሁ		መልስ (✓)	
		አዎ (1)	አይ (0)
ቁ1	እግር በየቀኑ ማታ ማታ መታየት/መመርመር እንዳለበት ያወቃሉ ?		
ቁ2	የትኛዉ የእግር ክፍል መታየት እንዳለበት ያወቃሉ ?		
ቁ3	እግሮት ላይ ምንምን መታየት እንዳለበት ያወቃሉ ?		
ቁ4	እግሮትን ከመታጠብት መሬት የዉሃሙቀት ምታየት እንዳለበት ያወቃሉ ?		
ቁ5	እግርዎትን በየጊዜው ከታጠቡ በሃላ ያደርቃሉ በተለይ በጣትዎ መካከል ?		
ቁ6	የእግር ቆዳ ስደርቅ ቅባት መቀባት እንዳለበት ያወቃሉ?		
ቁ7	በእግር ጣት መካከል ቅባት መቀባት እንደሌለበት ያወቃሉ ?		
ቁ8	በባዶ እግር መሄድ እንደሌለበት ያወቃሉ		
ቁ9	ሁልጊዜ ምቹት የሚሰጥዎትን ጫማ ይጫማሉ		
ቁ10	ጫማ ከመግዛቶ በፍት የሓክም ምክር እንደምያስፈልግት ያወቃሉ ?		
ቁ11	ጫማዎን ከመጫማትዎ በፊት ባጂድ ነገር ጫማዎ ውስጥ አንደሌለ ማረጋገጥ እንዳለበት ያወቃሉ ?		
ቁ12	ካልሲ በምን ያክል ግዜ መቀየር እንዳለበት ያወቃሉ ?		
ቁ13	የእግር ጥፍር ተስተካክሎ መቆረጥ እንዳለበት ያወቃሉ ?		
ቁ14	የእግር ጉጠት በራሶ ቆርጦ ማንሳት እንደሌለበት ያወቃሉ ?		
ቁ15	በእግሮት ጣት መካከል መድማት/መቅላት ብያስተዉሉ ቀድሞ የምወስዱት እርምጃ ምን እንደሆነ ያወቃሉ ?		

**ክፍል 4 : የእግር እንክብካቤ ትግበራን የሚመለከቱ ጥያቄዎች**

አሁን ስለ የእግር እንክብካቤ ትግበራን የሚመለከቱ ጥያቄዎችን እጠይቆታለሁ ((✓) ሳጥን ላይ ያስቀምጡ))		
ቁ1	እግሮችን ቅባት ይቀባሉ	<input type="checkbox"/> በአብዛኛው (3) <input type="checkbox"/> አንድ አንዴ (2) <input type="checkbox"/> በአጋጣሚ (1) <input type="checkbox"/> በፍጹም(0)
ቁ2	ጫማ ከመግዛቶ በፊት ሓክሞን ያማክራሉ ?	<input type="checkbox"/> በአብዛኛው (3) <input type="checkbox"/> አንድ አንዴ (2) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(0)
ቁ3	ጫማዎን ከመጫማትዎ በፊት ባእድ ነገር ጫማዎ ውስጥ አንደሌለ ያረጋግጣሉ ?	<input type="checkbox"/> በአብዛኛው (3) <input type="checkbox"/> አንድ አንዴ (2) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(0)
ቁ4	ሲል ጫማ ይጫማሉ/ያደርጋሉ	<input type="checkbox"/> በአብዛኛው (0) <input type="checkbox"/> አንድ አንዴ (1) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(3)
ቁ5	ያለካልሲ ጫማ ይጫማሉ/ያደርጋሉ ?	<input type="checkbox"/> በአብዛኛው (0) <input type="checkbox"/> አንድ አንዴ (1) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(3)
ቁ6	ቤት ውስጥ በባዶ እግሮች ይሄዳሉ ?	<input type="checkbox"/> በአብዛኛው (0) <input type="checkbox"/> አንድ አንዴ (1) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(3)
ቁ7	ከቤት ውጭ በባዶ እግሮች ይሄዳሉ ?	<input type="checkbox"/> በአብዛኛው (0) <input type="checkbox"/> አንድ አንዴ (1) <input type="checkbox"/> በአጋጣሚ (2) <input type="checkbox"/> በፍጹም(3)