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DEPARTMENT OF NURSING AND MIDWIFERY

HEALTH-RELATED QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG TYPE 2 DIABETIC PATIENTS ATTENDING FELEGE HIWOT REFERRAL HOSPITAL, BAHIR DAR, AMHARA REGIONAL STATE, NORTH WEST ETHIOPIA, 2015

By

KIDIST REBA (BSC)

A THESIS SUBMITTED TO GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY, DEPARTMENT OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN ADULT HEALTH NURSING

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KIDIST REBA (BSc)

ADVISOR: Mr. ZELEKE ARGAW (RN, MScN)

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This thesis by Kidist Reba is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of Master of Science in Nursing.

Internal Examiner:

Full Name	Rank	Signature	Date
_____	_____	_____	_____

Research Advisor/Supervisor:

Full Name	Rank	Signature	Date
Zeleke Argaw	_____	_____	_____

Chair of Department

Full Name	Rank	Signature	Date
Daniel Mengistu	Assistant professor	_____	_____

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Abbreviations/Acronyms

HRQOL	Health related quality of life
QOL	Quality of life
WHO	World Health organization
WHO-QOL	World Health Organization quality of life
DM	Diabetes Mellitus
IDF	International Diabetic Federation
ADA	American diabetic association
CDC	Center for disease control and prevention
FHRH	Felege Hiwot Referral Hospital
BMI	Body mass index

Abstract

Introduction: Diabetes mellitus is a chronic non-communicable disease with considerable impact on health status and quality of life. It can have a profound effect on quality of life in terms of social and psychological well-being as well as physical ill-health.

Objective: The aim of this study was to assess health related quality of life and its associated factors among Type 2 diabetic patients attending in Felege Hiwot Referral Hospital.

Methods: Institutional based cross-sectional study design with both quantitative and qualitative method was conducted April 15 to May 15, 2015. Structured and validated questionnaire was adapted from WHOQOL-BREF for collecting quantitative data and systematic sampling technique was used to select 344 participants while in-depth interview were conducted on eight Participants for qualitative study. SPSS Statistics Version 20 was used, the data was summarized, organized in tables, graphs and described with percentage and mean scores. Simple and multiple linear regressions analysis was used to see the association between dependent and independent variables and the result was presented by using p-value <0.05, as a cut of point.

Results: A total of 344 type II diabetes patients were involved in the study with the response rate of 100% (344). Among the total respondents, majority of them 197 (53.3%) were male and more than 30% of them were >47 years old, with a mean age of 40.54±15.208. Age, educational status, income, marital status, occupation, presence of diabetic related Complications had a positive & statistically significant association with health related quality of life (HRQOL). While gender, drug regimen and duration with diabetic mellitus(DM) illness were not found to be statistically significant predictors of Health related quality of life.

Conclusions: The overall health related quality of life was lower in older patients. Patients with lower educational status had poor QOL than well educated once. Unemployed DM patients had low quality of life than employed. As income increases health related quality of life (HRQOL) of Patient would likely increase.

Recommendations: Health care team for diabetics should not be only disease-centered; QOL should regularly assessed and improved accordingly, Special attention should be given to DM patients to create job opportunities, further research need to be conducted by including large sample size.

Key-words: Health- related quality of life, Type 2 diabetes

CHAPTER ONE: INTRODUCTION

1.1 Background

Diabetes is one of the commonest and non communicable disease remains highly prevalent with an increasing incidence globally. It is classified under three major groups, namely, type 1, type 2, and gestational diabetes (1). World health organization defined Diabetes mellitus (DM) as a metabolic disorder of multiple etiology characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both (2). Diabetes mellitus is one of chronic diseases that involve people of all ages and races and it is considered as one of the most common chronic diseases in approximately all countries, and its prevalence continues to increase mainly due to the changes in lifestyles resulting in physical inactivity, and increased obesity (3).

Globally, 382 million people, or 8.3% of adults, are estimated to have diabetes about 80% live in low- and middle-income countries and if these trends continue, by 2035, about 592 million people, or one adult in 10, will have diabetes and in Africa about 19.8 million adults were estimated have diabetes and regional prevalence of 4.9% and Africa's most populous countries have the highest numbers of people with diabetes, including: Nigeria (3.9 million), South Africa (2.6 million), Ethiopia (1.9 million), Tanzania (1.7 million) According to 2013 international diabetes federation (IDF) atlas report 1.9 million people of Ethiopia have diabetes with 4.36% national prevalence of diabetes (1).

The total number of excess deaths attributable to diabetes worldwide was estimated to be 3.96 million in the age group 20–79 years, 6.8% of global (all ages) mortality. Diabetes accounted for 6% of deaths in adults in the African Region, to 15.7% in the North American Region. Beyond 49 years of age diabetes constituted a higher proportion of deaths in females than in males in all regions, reaching over 25% in some regions and age groups. Thus, diabetes is a considerable cause of premature mortality, a situation that is likely to worsen, particularly in low and middle income countries as diabetes prevalence increases (4).

According to the International Diabetes Federation, Type 2 diabetes accounts for 85% to 95% of all diabetes in high-income countries and may account for an even higher percentage in low- and middle income countries. Type 2 diabetes is a common condition and a serious global health problem (1). Type 2 diabetes mellitus is a multidimensional health problem with consequences of

Chronicity and complications like disability, decreased health-related quality of life (HRQOL) and premature death (5).

Type 2 diabetes is on the rise worldwide. The International Diabetes Federation (IDF) reports that as of 2013 there were more than 382 million people living with diabetes. The World Health Organization (WHO) estimates that 90 percent of people around the world who suffer from diabetes suffer from type 2 diabetes. In 2004, high blood sugar as a result of diabetes led to an estimated 3.4 million deaths worldwide. More than eight of every 10 diabetes-related deaths occur in low- and middle-income countries. WHO anticipates that worldwide deaths attributable to diabetes will double by 2030. Adults ages 40 to 59 comprise the world's age group with the highest diabetes rates, although this is expected to shift to adults ages 60 to 79 by 2030 (6).

Most of the chronic illness therapeutic success is measured by disease free, overall survival and control major physical symptom while this factor is play a primary role on this evaluation effort have been made to assess the extent to which the chronic disease and their treatment affect patient's functional psychological and social health and overall sense of well being or quality of life (QOL) (7).

The World Health Organization (WHO) defines Quality of Life (QOL) as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (8).

Diabetes is a chronic disease, leading to many complications include micro vascular (nephropathy, retinopathy, and neuropathy) and macro vascular (stroke, myocardial infarction, and coronary artery disease) with co morbidities leads to a substantial decrease in the patients' quality of life as well as socio-economic implications (9).

Therefore, measuring health-related quality of life (HRQOL) is important, because they predict the individual's capacity to manage his disease and maintain long-term health and well-being and it is also increasingly recognized as an important health outcome in its own right, representing the ultimate goal of all health interventions (10).

1.2. Statement of Problem

Diabetes is a chronic disease with considerable impact on health status and quality of life and it is considered an urgent public health issue because it has a pandemic potential (11). Most of the increased number of adult diabetics has occurred in developing countries (3).

Diabetes can have a profound effect on quality of life in terms of social and psychological well-being as well as physical ill-health and it is one of the most psychologically demanding of the chronic diseases; with psychosocial factors pertinent to nearly every aspect of the disease and its treatment (12).

Several studies have demonstrated that diabetes has a negative influence on the overall health related quality of life (HRQOL) and its domains of physical, psychological and social relationships and environment (13-19). In a longitudinal study the psychosocial impact of diabetes was found to be one of the five strongest predictors of mortality in diabetic patients, stronger than many clinical and physiological variables (20). Additionally, chronic complications of diseases are responsible for high morbidity and mortality of diabetes with significantly reduce the quality of life of patients (21). Study in Canada by Harvey et al found that diabetes had a negative impact on the HRQOL. The determinants were sex, socio-economic status, marriage, body mass index and diabetes duration (22).Similar study done in Thailand and India revealed that diabetes has impacts on various aspects of health related quality of life. According to these studies, QOL is affected by level of education, socio-economic status, gender, glycemic control, adherence to diabetic life-style, diet and complications (23, 24).

In general, even though type 2 diabetes mellitus has many effects on the wellbeing of a person, it is recommended that assessment should be taken on quality of life since it helps to predict the individual's capacity to manage his disease and maintain long-term well-being and quality of life is also increasingly recognized as an important health outcome in its own right, representing the ultimate goal of all health interventions (19). Studies have shown that HRQOL survey scores for diabetics are much lower than those reported for non diabetics (25, 26).

To improve the performance of everyday life activities and health-related quality of life (HRQOL), health care providers should strive to understand the physical, emotional, and social impacts of having chronic disease and theoretically, such patient centered knowledge can be incorporated into chronic disease treatment (25, 27).

There is lack of studies in Ethiopia that are conducted on assessment of health related quality of life and its associated factor among type 2 diabetes patients. Thus, to fill the gap in knowledge about HRQOL of people with diabetes, measuring HRQOL and identifying the variables affecting it are crucial to guide health care professionals towards intervention strategies tailored to improving the HRQOL of patients with diabetes.

1.3. Significance of the study

Several studies, in the world wide, have shown the impact of diabetes on quality of life in terms of social, psychological and physical well being. Therefore this finding is important for further understanding of determinants of HRQOL among individuals with diabetes could guide targeted intervention strategies to improve outcomes for this population group and will assist health care professionals to understand factors related to health related quality of life .This also enables them to manage diabetes appropriately and study will be helpful to implement effective strategies that would lead the patient to optimum level of functioning.

Potentially findings of this study will help policy makers, program planning bodies and service providers to evaluate quality of existing policies, treatment strategies, programs and treatment guidelines and to improve or change them to attain optimum level of functioning and also helps as a baseline for future studies.

Finally since there is a limited research at country level, this study can be used as resource for other studies on this regard.

CHAPTER TWO: LITERATURE REVIEW

Diabetes Mellitus (DM) is a highly prevalent chronic disease and its associated complications are increasing worldwide (28). The estimated global prevalence of diabetes is 382 million people and is anticipated to rise to 592 million by the year 2035. Diabetes is on the rise all over the world with 8.3% global prevalence of DM, almost all regions of the world experiencing the increased prevalence 5.7% prevalence in Africa 6.8% in Europe 10.9% in Middle East and North Africa 9.6% in North America and Caribbean 8.2% in South and Central America, 8.7% in south East Asia, 8.1% in western pacific. (1).

It is also a common and demanding health related problem that has a wide effect on every day's life of the patients (29). Diabetes mellitus is a chronic illness and the most common endocrine disease, although the disease is prevalent worldwide, there is significant difference frequency among countries (30, 31). In the United Arab Emirates (UAE), like other parts of the world, the prevalence of diabetes is rising dramatically and UAE ranks second highest worldwide for the prevalence of diabetes and the disease accounts for 75% of deaths among UAE nationals (32). In the Gaza, the prevalence of diabetes was estimated at 11% in the rural and 14% in the urban population of the West-Bank(33) .

The prevalence of diabetes is rising in Africa and the third world countries due to adaptation of the western lifestyle and diet (34). In Africa, the traditional rural communities still have low prevalence of 1-2%, while 1-13% or more adults in urban communities have diabetes with Kenya having an estimated prevalence of between 3.3% (35).

The disease was previously thought to be rare in Africa; however, as a result of changes in the lifestyle, feeding patterns, and levels of physical activity among other factors, the prevalence has increased in many African countries over the past few decades. For example, the diabetic population in Uganda, estimated at about 98,000 in 2000, increased more than fifteen times (1.5 million) in a decade (36).

Diabetes mellitus (DM) is associated with multiple medical complications that decrease the health-related quality of life (HRQOL) and contribute to suboptimal physical and mental functioning and earlier mortality (37, 38). HRQOL refers to the physical, psychological, and social domains of health that are influenced by a person's experiences, beliefs, expectations, and perceptions; therefore, health care providers should strive to understand the physical, emotional,

and social impacts of chronic disease such as DM (39). In order to improve the day-to-day functions and HRQOL, patient-centered knowledge can be incorporated into chronic disease treatment strategies that may lead to lesser , hospitalizations and reduced health care costs(40).

The World Health Organization (WHO) has established two main objectives in caring for diabetic patients: first, maintain the health and quality of life of individuals with diabetes through effective patient care and education and second, treat and prevent complications of the disease which should decrease morbidity and mortality as well as reduce treatment cost. To achieve these objectives is not easy unless there is a good cooperation from patients. However, if these objectives can be achieved, diabetic patients may obtain the same quality of life as healthy people(41). The burdens associated with diabetes, such as anxiety, regimented lifestyle and long-term complications have prompted researchers and clinicians to examine the impact of the disease on the health-related quality of life (HRQOL) of people with diabetes. Although diabetes is widely known to have a dramatic effect on the HRQOL of people with the disease, the concept of HRQOL is subjective and influenced by both individual and disease-specific variables (14-16, 19, 42).

Socio-demographic variables such as sex (14-16, 43-45), age, marital status (14, 16, 45), income (46), education(47, 48), and disease-related variables such as type (13, 14, 19), duration of diabetes and presence of complications of diabetes (13, 14, 44), can influence the perceptions of HRQOL among people with diabetes. Now a day, diabetes is considered as a useful model illness for in view of the effects of chronic disease on health-related quality of life (HRQOL) (49).

Over the past two decades, health care research has shifted towards studies that measure the multidimensional nature of health and health outcomes in naturalistic care settings (50). The focuses of these studies include physical health, quality of life and functional ability as outcome measures. Quality of life and glycemic control are now recognized as independent and achievable outcomes in diabetes management (51).

Measuring QOL changes usually involves soliciting peoples' self-reported feelings, behaviors and attitudes through interviewing or evaluating responses to questionnaires. The instruments and techniques used to assess quality of life vary according to the identity of the respondents, the setting of the evaluation and the type of questionnaire used. Quality of life, in general, can be measured with generic or disease - specific instruments. The WHOQOL instrument, short version

(WHOQOL-BREF) is generic instrument with cross cultural application and has been used as a measure of HRQOL for other chronic medical illnesses (8, 52). In addition to WHOQOL-BREF, a variety of instruments has been used to measure HRQOL in diabetes. Examples include SF-36 tool, QWB-SA (Quality of Well-Being Questionnaire), Euro QoL (European Quality of Life) or EQ-5D (Euro-QOL 5-Dimensions), DQLCTQ-R (Diabetes Quality of Life Clinical Trials k2Questionnaire Revised), ADDQOL (Audit of Diabetes Dependent QOL) instrument etc and WHOQOL-BREF is better tool because it has good to excellent psychometric properties of reliability and validity and it has been validated in people with type 2 diabetes (53).

Studies have shown variability in the QOL effects of type 1 and 2 diabetes. For example, Gafvels found that patients with diabetes mellitus more frequently lived alone and remained childless, participated in fewer social activities, and indicated less personal satisfaction than control patients(54). Women appear to experience a greater impact of diabetes on their QOL and experience more worries about complications and hypoglycem;2ia than men (55).

Other studies have found that patients with diabetes mellitus have good QOL in comparison to those with some other chronic diseases (27) Mayou et al (56) and Hanasted (57) reported that the majority of patients with type 1 and type 2diabetes mellitus experience a high degree of well-being, satisfaction, and enjoyment, although a minority noted that aspects of their lives were negatively affected by both forms of diabetes mellitus. It appears that type 1 diabetes mellitus has a greater negative impact on QOL than type 2 disease (58).

Studies also indicated that the progression of diabetic complications is associated with a decrease in QOL. The treatment of diabetes mellitus appears to have a complex effect on QOL. Jacobson et al found that patients with type 2 disease taking oral agents worried more about their condition than patients receiving insulin treatment or those treated by diet modification alone (58). The same study also reported that insulin treatment of type 2 disease led to decreased satisfaction with HRQOL and greater impact of the illness. Mayou et al found little difference in the QOL between patients treated by diet, oral agents, or insulin therapy (56).

In addition, other study result stated that early and aggressive intensive therapy leading to improved glycemic control is likely to reduce the impact of diabetes mellitus on HRQOL by slowing the onset and progression of complications (58). Low socioeconomic status had a strong negative impact on HRQOL in the younger age group (<50 years)(46) .

Mean scores of Quality of life with respect to physical, psychological, social and environmental domains were significantly higher among females compared to males ($p<0.01$). Quality of life domains and other continuous variables showed that there is significant positive correlation between age and physical, psychological, social and environmental domains ($r = 0.864, 0.396, 0.549, 0.420$ respectively and $p<0.001$)(46) .

A study that used short version (WHOQOL-BREF) tool shown that, three factors significantly influenced the total HRQOL: presence of diabetes complications, duration of diabetes and marital status. Presence of complications was the most powerful variable influencing the 4 domains of HRQOL, especially the physical domain. Duration of diabetes did not influence the psychological domain and marital status did not influence the physical and psychological domains (59).

Another study result also shown that Most of the respondents performed fairly well on the World Health Organization quality of life instrument, short version and poor quality of life was associated with some of the physical complications of diabetes mellitus, lower income, lower educational status, and type 2 diabetes mellitus (60).

The health-related quality of life (HRQOL) deficits reported by people with diabetes are generally attributed to the disease itself, its restrictive treatment regimens including diet, and its associated co- morbidities. Living with diabetes has financial, social and psychological handicaps though; the patient should be encouraged to lead a “normal life”. The treatment is demanding and often complex. The patient is expected to bear much of the responsibility for making decisions which affect his/her health, both in the short- and long-term. HRQOL will help evaluate the efficacy, cost effectiveness, and net benefits of current programs and interventions. There is a scarcity of data in developing countries with deteriorating economic environment compounded with social and cultural influences and its impact on patients and care of disease(61) .

CONCEPTUAL FRAMEWORK

Concepts that directly and indirectly related to major variables of the study that is health related quality of life derived from literature review. Among these variable socio demographic characteristics and clinical factor expected to affect the dependent variable of the study. Diagrammatically, it is showed as follows:

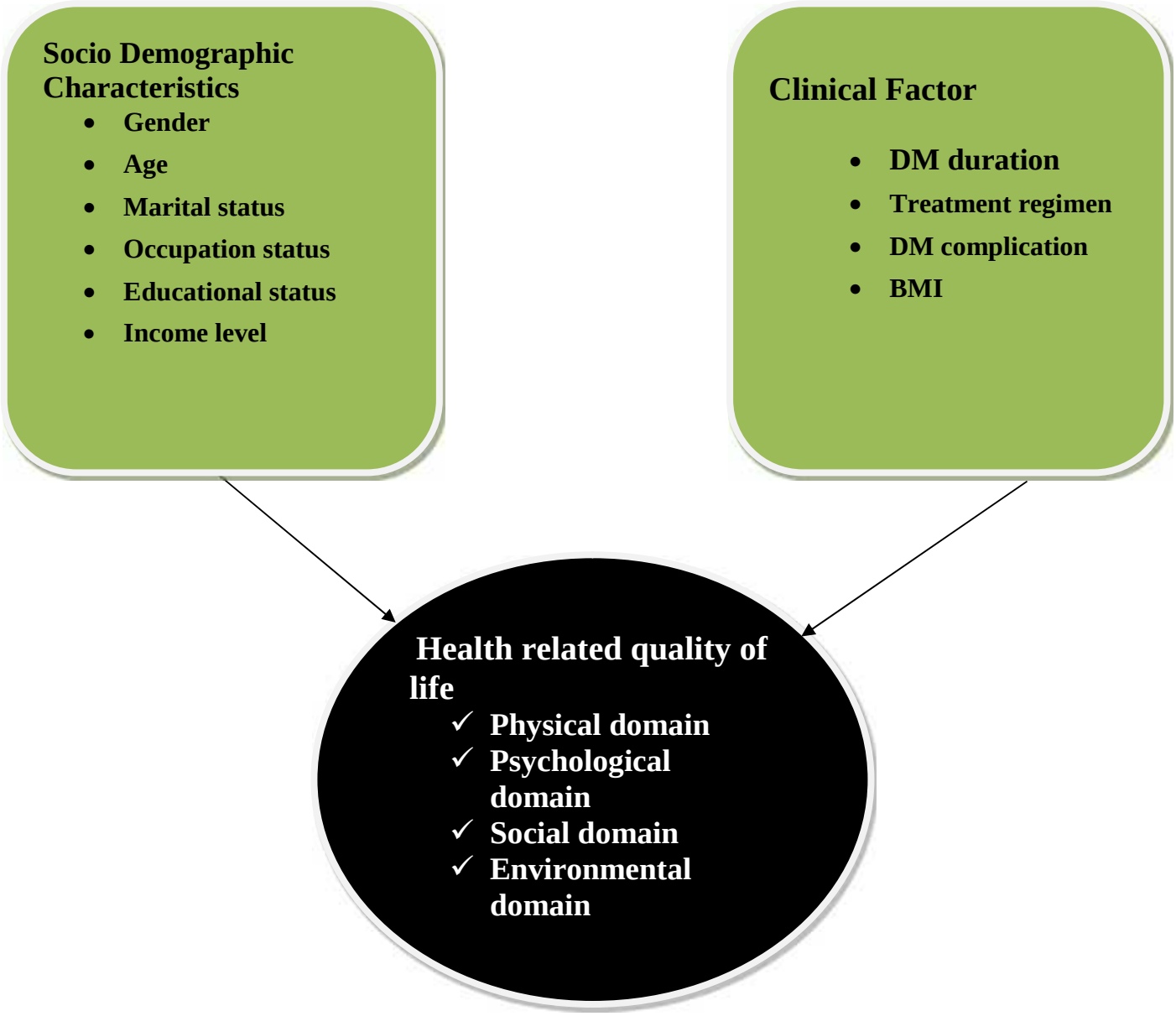

Figure 1 Conceptual Framework representation of interactions between the dependent and independent variables**.**

CHAPTER THREE: OBJECTIVES

3. 1 General objective

To assess health related quality of life and its associated factors among Type 2 diabetic patients attending Felege Hiwot Referral Hospital, Bahir Dar City, and Amhara Regional State, North West Ethiopia, 2015.

3.2 Specific Objectives

1. To assess health related quality of life among type 2 diabetic patients attending Felege Hiwot Referral Hospital.
2. To assess factors associated with health related quality of life among type 2 diabetic patients attending Felege Hiwot Referral Hospital.

CHAPTER FOUR: METHODS AND MATERIALS

4.1 Study area

The study was conducted at Felege Hiwot Referral Hospital found in Bahir Dar which is capital city of Amhara regional state, located 565 kms from Addis Ababa in North West of Ethiopia. Based on central statistical agency in 2010, this city has an estimated total population of 274,836.

Felege Hiwot Referral Hospital is a tertiary health care level hospital serving the population of Bahir Dar town and remote areas of northwest Ethiopia. According to Felege Hiwot referral Hospital chief executive officer (CEO) office report, the total population served by the hospital is about 12 million(Personal communications). It is the only governmental hospital in the city and the regional referral hospital serving the population in the region as referral center. It has 200 beds and there are three medical OPD serves for medical patients of which one serves as referral clinic for patients with chronic diseases. DM patients constitute larger number among attending in the follow up clinic. The follow up clinic was opened Four years ago.

4.2 Study period

The study period was conducted from April 15 to May 15, 2015 during the routine working hours of the hospital.

4.3 Study design

Institutional based cross sectional design was conducted by using both quantitative and qualitative methods.

4.4 Source Population

All type 2 diabetes patients who have follow-up at Felege Hiwot Referral Hospital

4.5. Study Population

Sampled adult type 2 diabetes patients having follow-up at Felege Hiwot Referral Hospital during data collection period and those who full fill inclusion criteria

4.6. Inclusion and Exclusion criteria

- **Inclusion criteria** –Known type 2 diabetes Patients having greater than or equal to one year follow up and aged 18 years and above**.**
- **Exclusion criteria -** Patients who were newly diagnosed during the study period and those have known serious clinical states, patient who has history of substance abuse, e.g alcohol, and drugs will be excluded from the study sample.

4.7 Sample size determinations

The overall minimum sample size, was determined using single proportion sample size Calculation formula

$$\mathbf{n = \frac{Z\,(\alpha/2)2 * p\,(1-p)}{d2} = \frac{(1.96)2(0.5)2}{(0.05\%)2} = 384}$$

n = Sample Size,

p = prevalence of health related quality of life among 2 DM patients

Z = standard normal deviation usually set at 1.96 which correspond to the 95% confidence interval.

d = is a tolerable margin of error (d=0.05)

Since the source population was 1,678 that was below 10,000 finite population correction was used

$$nf = \frac{ni}{1 + \frac{ni}{N}}$$

$$= \frac{384}{1 + \frac{384}{1678}} = 312.2 \sim 313$$

By considering 10% non response rate the final sample size will be 344

4. 8 Sampling technique and sampling procedure

I. Quantitative part:

A systematic random sampling was employed to select study participant. The diabetic clinic provides their service from Monday- Friday every week. On average 183 patients with Type 2 DM are treated per week while 733 patients are treated per month on average (which is the average number of patients with in six consecutive months). Based on the decision to collect data over the course of one month the sampling interval was determined by dividing the expected number of type 2 diabetic patients per month into the sample size (344) which gives approximately a sampling interval of two. Then the data was collected from each study participant with the interval of two until the desired sample size was reached.

II. Qualitative part:

Study participant was selected using purposive convenient sampling technique.

4.9 Data collection method

4.9.1 Data collection tool

I. Quantitative part:

The measuring instrument has two parts:

Part –I contains fifteen questionnaires on social demographic and clinical history

Part –II Contains WHOQOL-Brief questionnaire

The questionnaire developed through adaption from validated instrument of WHO-QOL and incorporating some additional questions. The WHO-QOL questionnaire tool has 4 domains (69). The four domain scores denote an individual's perception of quality of life in each particular domain. The WHOQOL-BREF is a 26-item instrument consisting of four domains: physical health

(7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items); it also contains QOL and general health items. Each individual item of the WHOQOL-BREF is scored from 1 to 5 on a response scale, which is stipulated as a five-point ordinal scale. The scores are then transformed linearly to a 0–100-scale .The higher total Scores denote higher quality of life. The physical health domain includes items on mobility, daily activities, functional capacity, energy, pain, and sleep (items 18-24). The psychological domain measures include self-

image, negative thoughts, positive attitudes, self-esteem, mentality, learning ability, memory concentration, religion, and the mental status (items 25-30). The social relationships domain contains questions on personal relationships, social support, and sex life (items 31-33). The environmental health domain covers issues related to financial resources, safety, health and social services, living physical environment, opportunities to acquire new skills and knowledge, recreation, general environment (noise, air pollution, etc.), and transportation (items 34-41) it also contains QOL and general health items (items16, 17). Finally the English version questionnaire was translated to Amharic (local language) for better understanding by the data collectors and respondents and back translated in to English language by another person to check its semantic equivalence.

II. Qualitative part:

The data was collected using in depth interview method. Interview guide were used as data collection tool. The guide was semi-structured open ended questions that could elicit information regarding the research objectives and was developed by the researcher after different literatures searched for. The English version interview guide was translated in to Amharic language which is the commonest language study participants used

4.9.2 Data Collection Procedure

I. Quantitative part:

Data was collected by four diploma nursing staffs from the study areas and two supervisors using face to face interview method. Moreover document review was done for identification of the major DM-complications. Thereafter, the aims, objectives, purpose of the study were orally explained to diabetic patients, who fulfill the inclusion criteria; they are given consent form to sign after explanation. Then the Data collectors were interview eligible and voluntary patients in a favorable place and the supervisors were monitored the data collection process.

II. Qualitative part:

The data collection was employed interview with exploration through probing questions by the principal investigator. Audio tape recorder was used, to avoid distraction of extensive note taking. The interview was ranged from thirty minutes to ninety minutes in length using tape recorded and filled note was taken by one trained note taker. Each individual were briefed about the study by the principal investigator then after obtaining informed consent place of the interview was arranged between the principal investigator and the interviewee. The whole

interviews were held in the hospital by the principal investigator. The interview was conducted in the morning and afternoon .All of the interviews was tape - recorded. Eight in-depth interviews (3 female and 5 male) were conducted to collect required information purposively until the information saturation reached.

4.9.3 Procedure for data processing and data analysis

I. Quantitative part:

The data was edited, entered into Epi-Data version 3.1 and exported to IBM SPSS Statistics Version 20 for analysis. The results was summarized and presented by tables, and charts. Percentage, frequency and mean calculated. Three items (two from physical domain, one from psychological domain) reversely coded in order to explain total score to be interpreted as higher scores meaning better outcomes. HRQOL scores were calculated using the WHO-QOL BREF tool. The mean score of items with in each domain is used to calculate the domain score in the WHO-QOL tool. The scores are then transformed linearly to a 0–100-scale for standardization (Higher scores denote higher quality of life).

For the purpose of analysis dummy variables created: educational status into literate vs illiterate, marital status in to married e vs. unmarried and occupation into employed vs. unemployed.

After checking the assumptions, simple and multiple linear regressions were done to see the association between the predictor and the outcome variables. Predictor variables that had p- value < 0.25 at simple linear regression taken in to multiple linear regression. B- Coefficients were used to show independent predictors of health related quality of life. Variable with P-value of less than 0.05 was taken as statistical significant.

II. Qualitative part:

The recorded interviews was first transcribed in Amharic by the principal investigator then translated to English and the main response was categorized to its theme manually. The main response from the respondent was reported using narrative and mentioned in direct quotation.

4.9.4 Data quality control

The collected data was reviewed and checked for completeness before data entry. The cleaning process was done by running simple frequency after data entry for its consistency. Data which is not consistent was checked by referring the hard copy questionnaire and finally data analysis was started after completion of these activities.

4.9.5 Pre test

Pretest was done on 10 % of sample size on similar patients following in Debre Markos Hospital which is different from the study area. Depending on the result of the pre test, correction and modification was made on the questionnaire before applied on the study population. The principal investigator was assessing the content and approach of the questionnaire and correct unclear issues on the questionnaire.

4.10 Study Variables

Dependent Variable

- Health related quality of life.

Independent Variables

- Age,
- sex,
- Marital Status
- Educational status,
- Income level
- Disease duration
- DM Complication
- BMI

4.11 Operational Definitions

- **Overall HRQOL:** First the score for each domain was calculated by summing up each item under each domain then each raw scale score was transformed to 0-100 scale by using the formula (69).

$$\text{Transformed Scale} = \left[\frac{(\text{Actual raw score} - \text{lowest possible raw score})}{\text{Possible raw score range}}\right] \times 100$$

Then the overall HRQL was calculated by summing up each transformed domain score and divided by four (number of domains).

- ❖ The higher total Scores denote higher quality of life and the lower score denote low quality of life.

- **BMI (body mass index):** is calculated as weight in kilogram divided by height meter square. Weight is taken to the nearest 0.5kg and height is to the nearest 0.5cm according to (center for disease control and prevention) CDC updated on July 11, 2014 BMI is categorized as

BMI	**Weight Status**
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

4.12 Ethical considerations

Ethical clearance and approval to conduct the research was obtained from Addis Ababa University College of Health Science School of allied Health Science, department of nursing and midwifery research and Ethical committee. Official letter from department of nursing and midwifery was written to Felege Hiwot Hospital. In addition, informed consent was obtained from study participant to confirm their willingness for participation after explaining the objective of the study. Respondents were clearly told that they have the right to refuse or terminate at any point of the interview. Respondents was reassured that they would be anonymous.

4.13 Dissemination of the results

The final report will be disseminated to the Department of nursing and midwifery, Addis Ababa University. Also the study findings will be disseminated to the, regional health bureau, respective health facility. Attempts will be made to publish the findings in scientific journal.

CHAPTER FIVE: RESULTS

5.1. Socio-demographic characteristics of the study participants

A total of 344 type 2 diabetes patients who had follow-up in DM clinic of FHRH were involved in the study to respond to interviewed questionnaire with the response rate of 100% (344). Among the total respondents, majority of them 197 (57.3%) were male and more than 30% of them were >47 years old, with a mean age of 40.54±15.208. As for marital status, more than half 209 (60.8%) of the study participants were married and for educational level, majority 143 (41.6%) had received secondary school education and above. Most of the study participants were government employee and unemployed with percentage distribution of 30.2 and 22.4 respectively **(Table 1**).

Table 1: Socio-demographic characteristics of type 2 diabetic patient in Felege Hiwot referral hospital, Bahir Dar, 2015**.**

Variable	Frequency (N)	Percentage (%)
Gender		
Male	197	57.3
Female	147	42.7
Age(Mean & S.D)	40.54±15.208	
Educational status		
Can't read & write	117	34
Read & write but no formal educ.	23	6.7
Primary education	61	17.7
Secondary education and above	143	41.6
Religion		
Orthodox	267	77.6
Muslim	70	20.3
Protestant	7	2.1
Ethnicity		
Amhara	336	97.6
Gurage	4	1.2
Tigre	4	1.2
Marital status		
Single	62	18
Married	209	60.8
Divorced	33	9.6
Widowed	40	11.6
Occupation		
Government employee	104	30.2
Unemployed	77	22.4
Merchant	48	14.0
Student	22	6.4
Farmer	76	22.1
Private employee	17	4.9
Income (Mean & S.D)	1962.62±2232.873	
Duration of DM(Mean & S.D)	5.275±4.5066	

5.2 Diabetic related characteristics of the study participants

5.2.1 Duration on diabetes among the study participant

More than half 193 (57%) of the study participant had been diagnosed with diabetes from 1 up to 5 years of duration and 184 (53.5%) of the participants had major DM complications as shown in **figure 1and 2 respectively**.

Among major DM complications that are recorded from the study participant, the leading once are diabetic retinopathy, two and above complications and diabetic foot ulcer with a percentage distribution of 25.5%, 21.7% and 21.2% respectively (**Figure 3**).

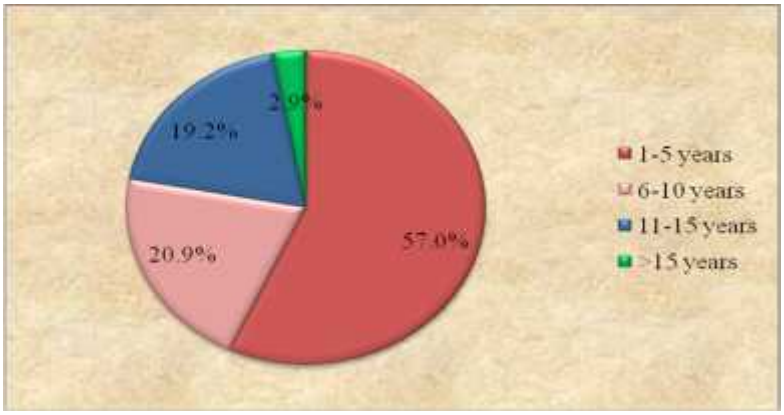

Figure 2: Duration of type 2 diabetes illness, Felege Hiwot Referral Hospital, Bahir Dar, 2015

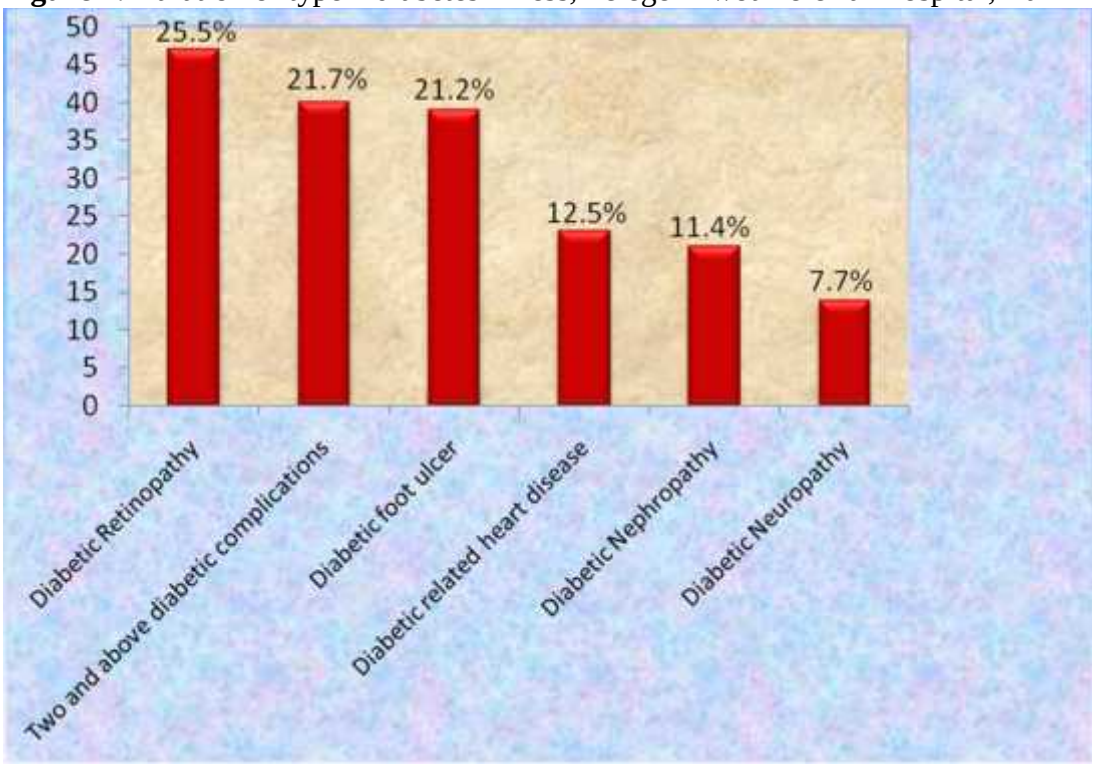

Figure 3: Types of DM complication, Felege Hiwot referral hospital, Bahir Dar,2015

5.2.2 BMI Measures of the Study Participants

Majority of the study participants 58.1% were rated as normal weight and 6.1% and 5.2% of them were rated as obese and underweight respectively, according to center for disease control and prevention measures. The mean BMI of the study participants were 23.8 ± 3.7

Table 2: BMI of type 2 diabetic patient at Felege Hiwot Referral Hospital, Bahir Dar, 2015.

BMI Level	Frequency (N)	Percentage (%)
Below 18.5	18	5.2
18.5-24.9	200	58.1
25-29.9	105	30.6
30 and above	21	6.1
Total	344	100.0

5.3 Overall HRQOL scores of the study subject

Among the four domains of HRQOL, study participant had higher mean and maximum percentage score on social domains with frequency distribution of 57.8±14.8 & 91.7 respectively and the lowest mean score were recorded on physical domain (48.1±20.4). According to the transformed overall HRQOL of all study participants, the mean and maximum score of the overall HRQOL score were 52.6± 12.1 and 82.9 respectively, as stated in **Table 3.**

Table 3: The four domains of HRQOL with their mean score and overall HRQOL, Felege Hiwot Referral Hospital, Bahir Dar, 2015

Domains of HRQOL and Overall HRQOL	N	Mean	Median	Minimum score (%)	Maximum score (%)	SD
Physical Domain	344	48.1	46.4	7.1	92.9	20.4
Psychological domain	344	52.1	54.2	4.2	87.5	16.3
Social domain	344	57.8	58.3	.00	91.7	14.8
Environmental domain	344	52.3	53.1	6.3	84.4	13.0
Overall HRQOL	344	52.6	51.9	6.5	82.9	12.1

5.4 The mean score of the domains of Health related quality of life on socio-demographic variables

The mean score of socio-demographic variables on the domains of quality of life was checked and as for the gender, the highest mean score on all except social domain were recorded by male DM patients whereas female DM patients recorded the highest mean score only to social domain and as for age category, the highest mean score on almost all domain of quality of life were recorded by DM patients whose ages are between 28-37 and those whose ages are greater than 47 were recorded the lowest.

As for educational status, those DM patients who completed secondary education and above were achieved the highest mean score on almost all domains of quality of life except social domain and the lowest mean score were recorded on each domain by DM patients who can't read and write.

As for marital status, the highest mean score were recorded on psychological and social domain by DM patients who were single (unmarried) and for physical and environmental domains by married respondents. As for occupational status, the highest mean score on each domains of quality of life was recorded by merchants and government employer DM patients and the lowest mean score for almost all domains were recorded by unemployed once.

Those DM patients who categorized under high income level were recorded the highest mean score on all HRQOL domains and the lowest were by low income DM patients. As for DM duration, the highest mean score were recorded for each domains of health related quality of life by patients with less DM duration (1-5 years). Those 11-15 years duration DM patients scored the lowest mean score on physical and psychological domains where as high mean score on environmental domain were recorded by patients with greater than 15 years duration.

As for drug regimen of DM patients, the highest mean score were recorded on all domains of HRQOL by DM patients who had a drug regimen of oral anti-diabetic medication and the lowest mean score were recorded on almost all domains by those who had insulin drug regimen only. The whole variables mean score and SD is listed in **Table 4 below**.

Table 4 Mean score of domains of HRQOL of life with socio-demographic characteristics of type 2 diabetic patients, Felege Hiwot Referral Hospital, Bahir Dar, 2015

Variables		Physical	Psychological	Social	Environmental
Gender	N	197	197	197	197
Male	Mean	48.8	53.2	56.5	53.7
	SD	20.4	16.5	15.9	13.0
Female	N	147	147	147	147
	Mean	47.2	50.6	59.5	50.5
	SD	20.2	13.1	13.1	13.1
Age	N	83	83	83	83
18-27	Mean	50.6	57.3	59.1	52.6
	SD	19.9	13.9	12.9	10.7
	N	77	77	77	77
28-37	Mean	55.9	56.7	61.7	53.2
	SD	20.0	10.4	15.5	13.3
	N	78	78	78	78
38-47	Mean	47.6	53.4	57.2	55.1
	SD	20.5	14.9	16.8	13.1
	N	106	106	106	106
>47	Mean	40.9	43.6	54.2	49.5
	SD	18.8	15.8	13.5	13.9
Educational status	N	117	117	117	117
Can't read & write	Mean	40.8	45.3	55.2	45.0
	SD	19.4	15.0	14.6	12.7
Read and write but no formal education	N	23	23	23	23
	Mean	45.3	51.1	59.1	51.6
	SD	19.2	18.7	12.8	16.0
Primary education	N	61	61	61	61
	Mean	49.1	51.3	53.1	54.8
	SD	18.4	14.4	12.7	10.4
Secondary education and above	N	143	143	143	143
	Mean	54.2	58.0	61.6	57.5
	SD	20.5	15.5	15.3	10.8

Marital status	N	62	62	62	62
Single	Mean	50.6	56.6	59.7	53.5
	SD	21.5	15.7	16.7	11.5
Married	N	209	209	209	209
	Mean	51.5	54.5	58.0	53.7
	SD	18.3	15.3	14.4	12.2
Divorced	N	33	33	33	33
	Mean	35.8	42.5	53.8	48.8
	SD	18.9	15.1	12.2	15.7
	N	40	40	40	40
Widowed	Mean	35.5	39.9	56.9	46.5
	SD	22.2	14.7	15.9	14.9
Occupation	N	104	104	104	104
Government	Mean	49.4	54.7	60.7	54.5
employee	SD	18.6	15.2	15.9	12.2
	N	77	77	77	77
Unemployed	Mean	40.4	45.5	55.2	46.9
	SD	19.8	17.8	15.9	13.4
Merchant	N	48	48	48	48
	Mean	61.8	59.6	59.2	58.8
	SD	19.7	15.4	10.9	9.2
	N	22	22	22	22
Student	Mean	46.0	55.7	57.6	59.9
	SD	21.4	15.6	15.4	6.7
	N	76	76	76	76
Farmer	Mean	46.9	48.5	55.3	46.3
	SD	18.9	13.8	14.5	12.6
	N	17	17	17	17
Private employee	Mean	47.6	45.2	55.4	62.3
	SD	24.1	16.5	10,.3	9.8
Level of income	N	11	11	11	11
Low income	Mean	42.9	47.5	57.0	48.4
	SD	19.9	17.3	16.1	15.1
	N	134	134	134	134
Medium income	Mean	49.4	52.1	57.9	50.3
	SD	20.4	14.9	13.6	10.6
High income	N	99	99	99	99
	Mean	52.3	57.2	58.5	59.4
	SD	20.1	15.5	15.1	10.4
Duration DM	N	196	196	196	196
1-5 years	Mean	54.3	57.9	60.3	52.9
	SD	18.7	13.9	14.8	12.6
6-10 years	N	72	72	72	72
	Mean	44.8	47.2	52.2	50.5

	SD	21.5	17.4	16.4	14.4
11-15 years	N	66	66	66	66
	Mean	33.6	40.9	56.2	52.5
	SD	15.7	13.0	11.4	11.8
	N	10	10	10	10
>15 years	Mean	46.4	45.8	58.3	53.8
	SD	21.2	21.4	13.0	17.4
Drug Regimen	N	74	74	74	74
Oral anti diabetic medication only	Mean	54.8	58.1	62.7	53.0
	SD	17.6	15.7	15.6	12.0
	N	221	221	221	221
Insulin only	Mean	46.7	49.4	56.0	51.5
	SD	21.1	15.5	14.0	13.6
	N	49	49	49	49
Insulin and oral anti	Mean	44.8	54.8	58.2	55.2
diabetic medication	SD	19.5	16.6	16.0	11.5

5.5 Mean score of overall HRQOL on socio-demographic variables

The distribution of socio-demographic variables and overall health related quality of life among DM patients were assessed and the following results were recorded.

Male DM patients were recorded the highest mean score of about 53.1 with S.D ±12.5 on the overall HRQOL than females (mean=52.0 and SD±11.7). DM patients with the age category of about 28-37 were recorded the highest mean score of 56.9 with S.D of ± 12.1 on the overall HRQOL and those whose age were greater than 47 scored the lowest with a mean of 47.1 and S.D ±12.1.

As for educational status, DM patients who completed secondary school and above were recorded the highest mean score of 57.8 with S.D± 11.5 on all over HRQL and those who can't read and write scored the lowest mean of 46.5 with S.D± 11.7.

Among the total study participants, single (unmarried) DM patients scored the highest mean score of 55.1 with S.D ±11.9 on all over HRQOL and those widowed DM patients scored the lowest mean of 44.7 with S.D ±13.4.

Merchants and government employee DM patients were recorded the highest mean score (60.0 ± 10.4and 54.9 ± 11.2 respectively) on overall HRQOL where as D.M patents who are unemployed and farmers scored the lowest mean of about 47.0± 13.4 and 49.2 ± 10.4 respectively. As for

level of income, DM patients who had higher income recorded the maximum mean score of 56.9 with S.D ±11.2 on overall HRQOL and those who had low income scored the lowest of 48.9 with S.D ±13.0.

Table 5: Overall HRQOL of type 2 diabetic patient with the Socio-demographic characteristics Felege Hiwot Referral Hospital, Bahir Dar, 2015 (N=344)

Variable		Overall HRQOL		
		N	Mean	SD
Gender	Male	197	53.1	12.5
	Female	147	52.0	11.7
Age	18-27	83	54.9	9.6
	28-37	77	56.9	12.1
	38-47	78	53.3	12.1
	>47	106	47.1	12.1
Educational status	Can't read & write	117	46.5	11.7
	Read and write but no formal education	23	51.8	11.4
	Primary education	61	52.1	9.1
	Secondary education and above	143	57.8	11.5
Ethnicity	Amhara	336	52.5	12.2
	Gurage	4	55.8	10.4
	Tigre	4	57.8	10.0
Marital status	Single	62	55.1	11.9
	Married	209	54.5	11.3
	Divorced	33	45.3	9.4
	Widowed	40	44.7	13.4
Occupation	Government employee	104	54.9	11.2
	Unemployed	77	47.0	13.4
	Merchant	48	60.0	10.4
	Student	22	54.8	10.3
	Farmer	76	49.2	10.4
	Private employee	17	54.9	10.8
Level of income	Low income	111	48.9	13.0
	Medium income	134	52.4	11.1
	High income	99	56.9	11.2
Duration of DM	1-5 years	196	56.4	10.7
	6-10 years	72	48.8	13.3
	11-15 years	66	45.8	10.0
	>15 years	10	56.9	15.7

Drug regimen			
Oral anti diabetic medication only	74	57.15	10.8
Insulin only	221	50.89	12.2
Insulin and oral anti diabetic medication	49	53.25	12.2
Presence of Dm complication			
Yes	184	48.24	12.0
No	160	57.56	10.2

5.6 Perceived Health satisfaction and self rating of HRQOL Study Participants

The study participants were asked to express their quality of life and health satisfaction and according to the study result, only 5.5% of the patients rated their HRQOL as good, 29.1% of the total sample population were satisfied with their health, however majority (39.0%) of the patients were dissatisfied with their health. This is shown in (**Table 6)**

Table 6: Health Satisfaction and Self-rating of HRQOL among type 2 patients at Felege Hiwot referral hospital, Bahir Dar, 2015

Self-Rating of quality of life	**%**	**Self-reported Health satisfaction**	**%**
Very poor	8.7	Very dissatisfied	2.6
Poor	37.5	Dissatisfied	39.0
Neither poor nor good	47.7	Neither dissatisfied nor satisfied	29.1
Good	5.5	Satisfied	29.1
Very good	0.6	Very satisfied	0.2

Factors associated with HRQOL of type 2 diabetic patients

5.7 Simple linear regression analysis of type 2 diabetic patients with HRQOL

All predictor variables were entered in to the bivariate analysis and the result as showed below on **Table 7** indicated that nine predictor variables have p- value < 0.25 and these taken as candidate variables for multiple linear regression model.

Table 7: Simple linear regression analysis result of type 2 diabetic patients, Felege Hiwot Referral Hospital, Bahir Dar, 2015

Variable	Unstandardized Coefficients		standardized Coefficients			95% Confidence Interval for B	
						Lower Bound	Upper Bound
	B	Std. Error	t	ß	P-Value		
Gender	-1.136	1.324	-0.85	-0.046	.392	-3.741	1.469
Age	-0.233	0.041	-5.642	-0.292	**.000***	-0.314	-0.152
Educational status	3.659	0.457	8.001	0.397	**.000***	2.759	4.558
Marital status	4.887	1.317	3.711	0.197	**.000***	2.297	7.478
Occupation	5.391	1.419	3.799	0.201	**.000***	2.600	8.182
Income	-2.524	1.097	- 2.301	-0.123	**.022***	-4.681	- 0.367
Duration of DM	-0.839	0.139	-6.058	-0.311	**.000***	-1.111	-0.567
Drug regimen	0.001	0.000	2.230	0.120	**.026***	0.000	0.001
Diabetic related Complications	9.322	1.215	7.675	0.383	**.000***	6.933	11.710
Body mass index	-0.286	0.177	-1.610	-0.087	**.108***	-0.635	0.063

P-value <0.25

5.8 Multiple Linear regression analysis of type 2 diabetic patients with HRQOL

Enter method was used and predictor variable with largest p-value removed until the final model built. Age, educational status, income, marital status, occupation and presence of diabetic related complications were predictor variables of overall health related quality of life. These *statistically* significant variables ($p<0.05$) explains 30.8% of the variance in the outcome variable (Health related quality of life.).

As shown above on table 8, the multiple linear regression model indicated that Age had an inverse association with overall health related quality of life while educational status, income, marital status, occupation, presence of diabetic related complications had a positive and statistically significant association with HRQOL.

However Gender, drug regimen and Duration with DM illness were not found to be statistically significant predictors of health related quality of life.

A unit increase in age would likely decrease health related quality of life by -0.092. As Educational level increase overall HRQOL would likely increase by 5.864. As income increases health related quality of life would likely increase by 3.076. Being married would likely increase health related quality of life by 4.157. Being employed would likely increase health related quality of life by 4.494. Absence of diabetic related Complications would likely to increase health related quality of life by 5.904. Comparing the contribution of each independent variable, the largest beta coefficient is Presence of diabetic related Complications (ß= 0.243, p=0.000). This variable makes the strongest unique contribution to explaining the dependent variable (health related quality of life), when the variance explained by all other variables in the model is controlled. The ß value Age was the lowest (ß = - 0.116, p = 0.049), indicating that it made less of a unique contribution to the model when the variance explained by all other variables in the model is controlled (**Table 8**).

Table 8: Multiple Linear regression analysis of predicting variables on HRQOL among type 2 diabetic patients, Felege Hiwot Referral Hospital, Bahir Dar, 2015

Variables	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
	B	**Std. Error**	**t**	**ß**	**P-value**	**Lower Bound**	**Upper Bound**
(Constant)	38.836	3.611	10.756		0.000	31.73	45.939
Age	-0.092	0.047	-1.977	-0.116	**0.049***	-0.184	0.000
Educational status	5.864	1.254	4.674	0.229	**0.000****	3.396	8.332
Drug regimen	0.000	0.000	0.849	0.041	0.397	0.210	5.942
Marital status	4.157	1.168	3.559	0.167	**0.000****	1.860	6.455
Occupation	4.494	1.355	3.316	0.168	**0.001****	1.828	7.159
Income	3.076	1.457	2.111	0.104	**0.036***	1.210	6.962
Duration with DM	-0.215	0.161	-1.338	-0.080	0.182	-0.532	0.101
Diabetic related Complications	5.904	1.281	4.609	0.243	**0.000****	3.384	8.423

Dependent Variable: Overall Health Related Quality of Life

Max VIF=1.77, *p<0.05, **p<0.001, Adjusted R2=0.308, F=17.994, p=0.000

CHAPTER SIX: DISCUSSION

A total of 344 DM patients who had follow-up in DM clinic were involved as a study participants. Overall HRQOL was identified from the transformed physical, psychological, social and environmental domains of HRQOL of the study participants. The mean score of the overall transformed HRQOL of all study participants in this study was 52.6± 12.1.

Diabetes and its complications affected all the domains of the HRQOL. According to this study result, the mean score of DM patients were higher on the social and environmental domains and lower on physical and psychological. However, the study conducted in Gaza (46) shown opposite result as diabetes and its complications effects were strongest for the physical health and psychological domains and weaker for the social relationships and environment domains. These kinds of differences may be due to the presence of variations of life style, health care delivery system, social, economical, environmental, political and religious practices and/or experiences among DM patients who are living in Gaza and Bahir Dar.

A number of studies reported that diabetes mellitus is more common in females than males (14, 64) but on contrary to this, majority of the study participants197 (53.3%) in Bahir Dar diabetic clinic were male. These kinds of differences might be due to the difference in study population and sample size.

The results revealed that male DM patients had the highest mean score on each domain and men had higher mean score on overall HRQOL than females. The same results were reported by the studies conducted in Gaza, Nigeria and Iran (46, 60, 67).

In this study, most of the respondents (30.8%) were found at the age of greater than 47 with the mean age of 40.54±15.2 and the proportion of study participants with DM in the older age group was higher than in the younger and middle aged groups. This result was similar with the previous study done in Germany (41). As most patients belonged to the age group of either ≥ 50 years (50%) or 40-49 years (36.6%).

DM patients with the younger (28-37) age category recorded the highest mean score on physical, social and environmental domains of HRQOL and those older DM patients were recorded the lowest mean score. As for the transformed overall HRQOL mean result, those younger DM

patients were recorded the highest mean score (56.9) than those older DM patients as a mean of 47.1±12.2.

Being older DM patient was significantly associated with decreased overall HRQOL according to linear regression analysis result, i.e., as the age increases, HRQL would likely decrease by -0.092 ($p<0.05$). This finding is similar with the study which was conducted in India in 2014 (68). It was also supported by the result from in-depth interview.

For example: A 42 years old men stated that……

''……when I get older, I already lost the previous body strength to work hard and getting diet like those of young patients. Since we are DM patients, we are obliged to be selective on our diet and should get varieties of food during meal time. But that will be happened if work hard and that will be difficult for the older man like me"

As for educational status, those DM patients who completed secondary education and above achieved the highest mean score on physical, psychological and social domains than those DM patients that can't read and write. Educational status had a positive & statistically significant association with HRQOL. The study conducted in Nigeria (60) supported this study result. According to the result DM patients who scored poor HRQOL had lower educational level than DM patients with better educational level and DM patients who scored good or fair HRQOL were those who had better educational status.

Majority (60.8%) of these study participants were married and this result was the same as the study done in Emirate people (59) and Germany (41) as majority (70% and 79% respectively) of the respondents were married. The highest mean score was recorded on psychological and social domain by DM patients who were single (unmarried) and for physical and environmental domains by married respondents. Those single (unmarried) DM patients had the highest mean score (55.1± 11.9) on overall HRQOL and widowed DM patients had the lowest (44.7 ± 13.4). In this study being married increases, over all HRQOL by 4.494. This result similar to study done by Jacobson and colleagues, separated or divorced individuals experienced worse quality of life than those who were single or married (58).However it is different from a study done in Saudi, married patients had significantly worse QOL compared with non-married patients (65).This difference may be due to socio cultural difference and married patients satisfied in their life, support each other and have more persons who care and look them than unmarried.

The mean score of merchants and government employees were recorded highest on the four domains than unemployed who recorded the lowest on each. According to the transformed overall HRQOL result, DM patients who were merchants and government employees had higher mean score on overall HRQOL (mean score of 60.0±10.4 and 54.9 ±11.2respectivelly) than unemployed DM patients with a mean score of 47.0 ±13.4. The linear regression analysis result also shown that there was a statistically significant association between occupations and overall HRQOL and being employed would likely increase health related quality of life by 4.494 (p=0.001). The study done by Issa B and colleague (60)shown that overall quality of life were significantly correlated with occupation; according to their study result patient who had low occupational status were more likely to have poor score on HRQOL. This result also supported by in-depth interview, participant explained that……

…. it is known that DM disease is the one which needs extra costs for management. In addition to the living cost, patients always have extra cost for medication and that amount of cost will not be easily afforded for those unemployed and low income DM patients. By these and other reasons, most of the DM patients cannot easily start their follow-ups in the health centers and lay down on every corner of the cities and lastly they will die.

DM patients with high income level were recorded the highest mean score on all domains of HRQOL whereas, those who had low income scored the lowest and according to overall HRQOL result, DM patients who had higher income recorded higher mean score on overall HRQOL than those lower income patients as mean score of about 59.6±11.2 and 48.9±13.0 respectively. Income was found to be statistically significant association as income increase HRQOL would likely increase by 3.076. This result was the same as the study done in Nairobi (61).

The study result shown that majorities (57%) of the study participants were diagnosed with DM from 1to5 years of duration. DM patient with less duration of diagnosis (1-5 years) were recorded the highest mean score on physical, psychological and social domains of HRQOL whereas; patients with long duration of diagnosis (11and above years) scored the lowest. However, patients with the longest DM duration (>11 years) recorded the highest mean on environmental domain. This study result was similar to the study done in Kenya (61) that, above half of the study patients (52.5%) had diabetes for 1-5 years of duration.

According to this study result, more than half (53.5%) of patients had DM complications and diabetic retinopathy was the leading. The study done in Gaza (46) also supported this result as from the total respondents, 58.7% of DM patients had complications and retinopathy was the major one. However, patients with DM complications were greater in Kenyan (more than 70% of respondents had DM complication) than DM patients in Bahir Dar and unlike this study result, the Kenyan DM patients study finding shown that neuropathy was the leading complication(61).

According to this study result, diabetic related complications had a positive & statistically significant association with overall HRQOL (ß= 5.904, p=0.000) and DM duration was not statistically significant association on overall HRQOL. This results were almost similar with that of the previous study result (61, 46) as the HRQOL of the DM patients was associated significantly with the number of complications ($p<0.001$) This finding also agreed with in-depth interview result, participants explained that majority of DM patients currently traumatized not only by diabetes mellitus but also by other complications that will occur in association with DM. The cardiovascular diseases, such as hypertension, heart attack, and others will be occurred as a complication and starting treatments for each kind of complications will not that much easy for most of them.

For example: A 42 years old women said……

"……Still *we are suffering and obliged to lead a very difficult life. Previously, I was leading my own life without looking to and receiving any supports from others. By, now, life is becoming very difficult to me. I am suffering with hypertension, heart attack and nerve problem and currently, I can't do hard works that I could before. I am tired of the disease, and becoming hopeless with life. I will eat if I get food and sleep long if not since I can't help it!"*

The study result shown that those patients who had only oral anti diabetic medication recorded the highest mean score on physical, psychological, social and environmental domains and the lowest mean score were measured by those who had insulin drug regimen only. But drug regimen was not statistically significant in linear regression model.

Self rated quality of life and health satisfaction was studied among DM patients and according to the study result, only 5.5% of the DM patients were rated their HRQOL as good and more than 40% of the respondents rated their HRQOL as poor. However this study result was totally different than the previous study result (61) as stated 40% of the respondents rated their health as

good. This discrepancy may be because of the difference in socio economic status and difference health care service delivery for DM patients in the two countries.

As for self rated health satisfaction, majority of the DM patients (more than 40%) were dissatisfied with their health and only 29.1% of them were rated as satisfied. This result was almost similar to the study done in Kenya (61) as stated that small proportion (35%) of DM patients were satisfied with their health status. This finding was also supported by in-depth interview result.

For example: A 42 years old DM patient said that…..

"ehhhhh…. life is very difficult to DM patients. Its difficultness is being started from the drug administration mechanism. If you take the medication schedule of mine, injection is the only method that I followed regularly for long period. But still I have no improvement in my health, am tired of taking medication always and leaving with this disease,…..crying…. what is the meaning of taking medication always without any change in your health status? Really am getting hopeless and am not happy with my health condition."

CHAPTER SEVEN: STRENGTH AND LIMITATION

7.1 Strength of the Study:

- ❖ This study used both qualitative and qualitative method to explore or understand Type II DM patients' experience on HRQOL.
- ❖ The data collection instrument score was adopted from validated and standardized tool of WHOQOL-BREF (69).

7.2 Limitations of the study:

- Since the study was cross sectional it is difficult to infer causality (temporal relation).

- Like any cross –sectional study it is difficult to know whether determinant or outcome occurred first.

CHAPTER EIGHT: CONCLUSION & RECOMMENDATION

8.1. Conclusions

This findings revealed that age, educational status, marital status occupational status, diabetes related complication and income, were significantly associated with health related quality of life. while gender, drug regimen and duration of DM have no statistically significant association with HRQOL. As the age of DM patient increases their health related quality of life will decrease, patients with high level of education have high HRQOL than those with low level of education, married patients have increased HRQOL than singles, employed patients have increased HRQOL than unemployed one, As income increases their health related quality of life will increase, patients with no diabetes related complication have high HRQOL than those who have complication.

8.2. Recommendations

For decision/policy makers

- Special attention should be given to DM patients to break the cycle of low occupational status and low income. The concerned bodies should design a program that creates job opportunities for reduce the financial stress of DM patients.
- It will be better if the government give special attention for Elderly DM patients by establishing mechanisms to support them for improving their quality of life.

For health care providers

- It is knows that education has a power for changing the overall qualities of life, personalities and attitudes of a given society. Just to improve the quality of life of DM patients, educational programs should be designed and offered to DM patients in focus of improvement of understanding self care and management of DM, risk minimization, glycemic control, lifestyle modification and perception of self worth.
- Health care team for diabetics should not be only disease-centered; QOL of the diabetic patient should always be regularly assessed and improved accordingly.

For researchers

- Further researches need to be conducted by including other hospitals in order to assess health related quality of life of all DM patients in our country.

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ANNEX

Annex I. Information sheet and consent form (English version)

Dear respondent my name is _____ I am here to collect data for a study which entitled with "Assessment of Health related quality of life and its associated Factors among Type 2 diabetic patients, attending Felege Hiwot Referal Hospital in Bahirdar" .It is conducted by Kidist Reba, Who is a MSc student in nursing at Addis Ababa University, College of Medicine And Health Sciences, Department of Nursing & Midwifery. The interview explores about your quality of life and its associated factors will require about 20 to 25 minutes to be completed. As a study participant you will be benefited when the result is utilized. The study will be carried out in the form of interview and do not cause any harm to you. The result will be displayed in general form not in individual. To achieve the study, your honest and genuine participation by responding to the question prepared is very important and highly appreciated. You have also a right to continue or to discontinue as a participant and there is no any influence that insists you to participate unless you are volunteer.

We will proceed to the interview after you understand the following points

Objective of the study: To assess health related quality of life and its associated factors among Type 2 diabetic patients attending in Felege Hiwot Referral Hospital, Bahir Dar City, Ethiopia.

Benefit: The information generated from the study help policy makers and program planning, to improve QOL and will enable health care providers to implement other care beyond metabolic control.

Harm: The participants do not have any harm by participating to the study

Duration of the study and interview: The study conducted for one month. The interview may take from20- 25 minutes.

Alternatives to participation: You do not have to take part in this research if you do not wish to do so. Your participation/ non-participation, or refusal to respond to the questions will have no effect now or in the future on services that you or any member of your family may receive from any service providers. In between, you have the right to terminate from the study by any reason, related to the study or personal reason.

Confidentiality: We would like to assure you that the privacy will strictly be maintained throughout. Your responses to any of the questions will not be given to anyone else and no reports of the study will ever identify you. If a report of the results will be published, only Information about the total group will appear.

Persons to contact: If you have any question you can contact the investigator at the following address and you may ask at any time you want.

Kidist Reba

Tel: +251-0911178889

E-mail: kidistreba@gmail.com

Consent form: I have read the document stated above or it has been read to me by the data collector as I can understand all conditions stated above. Therefore, I have decided to:

1. Agree _____
2. Disagree _____ on participation of the study

And I confirmed it by signature _____

Name of the interviewer: _____Sign. _____ Date of interview_____
Name of the supervisor: _____ Sign. _____ Date_____

Thank You for willingness to participate

Anne II -English version Questioner

PART I- Question For Quantitative

This questionnaire is designed to assess quality of life and its associated factors among among diabetic patients attending Felege Hiwot Referral hospital.

Mark " x" on the space provided

Part I- Socio demographic characteristics

1. What is your gender? Male □ Female □
2. Age? _____ years
3. What is the highest level of education you received?
   - None at all ☐
   - Primary School ☐
   - High School ☐
   - College ☐
4. What is your religion?
   - Orthodox ☐
   - Muslim ☐
   - Protestant ☐
   - Others(specify)_____
5. What is your ethinicity?
   - Amhara ☐
   - Gurage ☐
   - Oromo ☐
   - Tigre ☐
   - Others specify_____
6. What is your marital status?
   - Single ☐ Separated ☐
   - Married ☐ Divorced ☐
   - Widowed ☐
7. What is your occupation?
   - Unemployed ☐
   - Employed ☐
   - Others(specify)_____
8. How much money do you earn on monthly basis? _____Ethiopian birr.

9. How long have you had diabetes? _____ in years.

Part II-Factors that affect quality of life

10. Which drug regimen you are following currently for your diabetes?

    Oral anti diabetic medication only □

    Insulin only □

    Insulin and oral anti diabetic medication □

    Only following dietary plan as recommended □

    Others(specify)_____

11. Do you have any diabetic related long term Complications?

    Yes □ No □

12. If your answer is "yes" for question no. 14 which type of complications do you have?(Multiple answers are possible)

    Diabetic Nephropathy □

    Diabetic Neuropathy □

    Diabetic Retinopathy □

    Diabetic foot ulcer □

    Diabetic related heart disease □

    Others (specify)_____

13. Weight _____kg

14. Height _____meters

15. Body mass index _____kg/m2

Part III- Questions for assessment of self rate quality of life and health satisfaction

16. How would you rate your quality of life?

(Please circle the number)				
Very poor	**Poor**	**Neither poor nor good**	**good**	**Very good**
1	**2**	**3**	**4**	**5**

17. How satisfied are you with your health?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

Part IV- Physical domain related questioner

18. To what extent do you feel that physical pain prevents you from doing what you need to do?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

19. How much do you need any medical treatment to function in your daily life?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

20. Do you have enough energy for everyday life?

(Please circle the number)				
Not at all	**A little**	**moderately**	**mostly**	**Completely**
1	**2**	**3**	**4**	**5**

21. How well are you able to get around?

(Please circle the number)				
Very poor	**Poor**	**Neither poor nor well**	**well**	**Very well**
1	**2**	**3**	**4**	**5**

22. How satisfied are you with your sleep?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

23. How satisfied are you with your ability to perform your daily living Activities?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

24. How satisfied are you with your capacity for work?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

Part V - Psychological domain related questioners

25. How much do you enjoy life?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

26. To what extent do you feel your life to be meaningful?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

27. How well are you able to concentrate on day to day activity?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

28. Are you able to accept your bodily appearance?

(Please circle the number)				
Not at all	**A little**	**moderately**	**mostly**	**Completely**
1	**2**	**3**	**4**	**5**

29. How satisfied are you with yourself ?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

30. How often do you have negative feelings, such as blue mood, despair, anxiety, depression?

(Please circle the number)				
Never	**Seldom**	**Quite often**	**Very often**	**Often always**
1	**2**	**3**	**4**	**5**

Part VI- Social domain related questioner

31. How satisfied are you with your personal relationships?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

32. How satisfied are you with your sex life?

(Please circle the number)				
Very Dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**Satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

33. How satisfied are you with the psychological support you get from your friends?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**Satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

Part –VII Environmental domain related questioner

34. How safe do you feel in your daily life?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

35. How healthy is your living physical environment?

(Please circle the number)				
Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
1	**2**	**3**	**4**	**5**

36. Have you enough money to meet your needs?

(Please circle the number)				
Not at all	**A little**	**moderately**	**mostly**	**Completely**
1	**2**	**3**	**4**	**5**

37. How available to you is the information that you need in your day-to-day life?

(Please circle the number)				
Not at all	**A little**	**moderately**	**mostly**	**Completely**
1	**2**	**3**	**4**	**5**

38. To what extent do you have the opportunity for leisure activities?

(Please circle the number)				
Not at all	**A little**	**moderately**	**mostly**	**Completely**
1	**2**	**3**	**4**	**5**

39. How satisfied are you with the conditions of your living place?

(Please circle the number)				
Very Dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**Satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

40. How satisfied are you with your access to health services?

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**Satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

41. How satisfied are you with your mode of transportation

(Please circle the number)				
Very dissatisfied	**Dissatisfied**	**Neither dissatisfied nor satisfied**	**satisfied**	**Very satisfied**
1	**2**	**3**	**4**	**5**

THANK YOU FOR YOUR TIME

Annex III . Information sheet and consent form (Amharic version)
የምርምር/ጥናት/ ማብራሪያና የስምምነት መግለጫ ቅጽ
የምርምር ፕሮጀክቱ

1. *መግቢያ*

እኔ ---------- እባላለሁ ቅድስት ፈባ በተባለች ተመራማሪ በስኳር ህመምተኞች የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማወቅ በተዘጋጀ ጥናት ላይ መረጃ ሰብሳቢ ሠራተኛ ስሆን ይህንንም ጥናት ለማሳካት የእርስዎ ቅንነት የተሞላበት ተሳትፎ ወሳኝነት አለው። የዚህ የምርምር ማብራሪያና የስምምነት ቅጽ ዓላማ አሁን እርስዎ እንዲሳተፉበት የምንጠይቀዎትን የምርምር ጥናት ምንነት ማብራራት ነው። በዚህ የምርምር ፕሮጀክት ለመሳተፍ ከመወሰንዎ በፊት ይህንን የማብራሪያ ቅጽ በጥንቃቄ በማንበብ ጥያቄዎች ካሉዎት ይጠይቁ። በተጨማሪም በጥናቱ መሳተፍ ከጀመረ በኃላ በማንኛውም ጊዜ ጥያቄዎች ካሉዎት መጠየቅ ይችላሉ።

2. **የምርምር ፕሮጀክቱ ዓላማ**

የስኳር ህመምተኞች የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማጥናት የተዘጋጀ ነው።

3. **የስብሬር ሂደት**

ይህንን ጥናት ዓላማ የተፈለገው ግብ እንዲመታና በጥናቱ መሠረት የሚለዩ የተለያዩ ችግሮችን በመንግሥትና በሌሎች ድጋፍ ሰጪ ድርጅቶች አካላት ተብብር ለማካኝነት በጥናቱ የተደረሰባቸውን ችግሮች ለመፍታት እርስዎ እንዲሳተፉ ተጋብዘዋል። በዚህ ጥናት ውስጥ ለመሳተፍ ከተስማሙ ስምምነቱን በደንብ መረዳትና እንዲሁም መፈረም ይገባዎታል። ከዚያ በመቀጠል በጥናቱ መረጃ ሰብሳቢዎች ለሚጠየቁት ጥያቄ እንዲመልሱ ፈቃደኝነትዎ ይጠየቃል። በዚህ ጥናት ሲሳተፉ የሚሠጡት መልስም ሆነ የሚገኘው ውጤት በምስጢር ይጠበቃል።

4. **ሊከሰቱ የሚችሉ ስጋቶችና ምቾት መጓደሎች**

በዚህ ጥናት መሳተፍዎ ምናልባት ጊዜዎን ሊሻማብዎ ይችል ይሆናል። ነገር ግን የጥናቱ ውጤት ወደፊት ከሚሠጠው ጥቅም አንፃር ይህን ያህል አይደለም። በዚህ ጥናት በመሳተፍዎ ምንም ዓይነት ስጋት (ችግር) አያጋጥምዎትም።

5. **ጥቅሞች**

በዚህ ጥናት በመሳተፍዎ የተለየ ጥቅም አያገኙም። ነገር ግን የርስዎ በጥናቱ መሳተፍዎ ለጥናቱ መሳካት በጥናቱ በተለያዩ ችግሮች መፍትሄ ሊሰጥ እረስዎ እና ሌሎች ታማሚዎች ተጠቃሚ ይሆናሉ።።

6. **ማካካሻ**

በዚህ ጥናት በመሳተፍዎ ምንም ዓይነት ማካካሻ አይሠጥዎትም። ነገር ግን በጥናቱ በመሳተፍዎ ምስጋናችን ከፍተኛ ነው።

7. **ምስጢር ስለመጠበቅ**

ከዚህ ጥናት የሚገኝ መረጃ በሙሉ በምስጢራዊነት ይጠበቃል።. ለዚህ ጥናት የሚሠበሰበው እርስዎን የሚመለከት መረጃ በማህደር የሚቀመጥ ሲሆን ማህደሩም በስመዎ ሳይሆን በተለየ ኮድ ሲቀመጥ ኮዱ ከዋናው ተመራማሪ ውጭ ለማንም አይገለጽም።

8. **በጥናቱ ያለመሳተፍ ወይም ፈስን የማግለል መብት**

በጥናቱ ላለመሳተፍ ከፈለጉ በዚህ ጥናት ያለመሳተፍ ወይም ከስንድ በላይ ወይም ሁሉንም ጥያቄዎች ለለመመለስ ይችላሉ። በዚህ ጥናት ባለመሳተፍዎ ወይም በከፊልም ሆነ በሙሉ ጥያቄዎችን ባለመመለስዎ ማንኛውንም አገልግሎት ከማግኘት አይከለከሉም።

9. የሚገናኟቸው ሠዎች

በጥናቱ ዙሪያ ማንኛውም ጥያቄ ካለዎት ከሚከተሉት ውስጥ ማንኛውንም ሠው በሚፈልጉት ጊዜ ማነጋገር ይችላሉ፡፡

1. ቅድስት ፊባ - አዲስ አበባ ዩኒቨርሲቲ

   ሞባይል ቁጥር - 0911178889

ከላይ በዝርዝር የተሰጡትን መረጃዎች እና ቅፁን አንብቤዋለሁ ወይም ልረዳ በምችለዉ መልኩ በ መረጃ ሰብሳቢዉ ተነቦልኛል፡፡ ስለሆነም በ ጥናቱ ላይ ለመሳተፍ የሚከተለዉን ወስኛለሁ

1. ተስማምቻለሁ ______________________________

2. አልተስማማሁም __________________________

ይህንንም በፊርማዬ አረጋግጣለሁ ______________________________

የመረጃ ሰብሳቢዉ ስም ______________________________ ፊርማ _________________

መረጃዉ የተሰበሰበበት ቀን______________________________

የመረጃ ተቆጣጣሪ ስም ________________________________ ፊርማ ________

ይህ መጠይቅ በፈለገ ህይወት ሪፈራል ሆስፒታል የስኳር ህመምተኞች ሊኖራቸው የሚችለውን የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማጥናት የተዘጋጀ ነው፡፡

<u>ክፍል አንድ -ማህበራዊ እና ስነ ህዝብ መረጃ መጠይቅ</u>

1.ፆታ? ወንድ □ ሴት □

2.እድሜ? _____

3.የትምህርት ደረጃ

ያልተማረ □

አንደኛ ደረጃን ያጠናቀቀ □

ሁለተኛ ደረጃን ት/ቤት ያጠናቀቀ □

የኮሌጅ ት/ትቤት ያጠናቀቀ □

4.ሐይማኖት ?

ኦርቶደክስ □

ሙሲሊም □

ፕሮቴስታንስ □

ሌላ (ይገለፅ)_____

5.ብሔር ?

አማራ □

ጉራጌ □

ኦሮሞ □

ትግሬ □

ሌላ (ይገለፅ)_____

6.የጋብቻ ሁኔታ ?

ያገባ □

ያላገባ □

የፈታ □

በሞት የተለየ □

7.የስራ ሁኔታ ?

የመንግስት ሰራተኛ □

ስራ የሌለው □

ሌላ (ይገለፅ)_____

8.የወር ገቢ መጠን? _____ የኢትዮጵያ ብር

9.የሥኳር በሽታ እንዳለብዋት ካወቁ ምን ያህል አመት ሆኗት፡፡ ----------አመት

ክፍል ሁለት- የስኳር ህመማን ጥሩ የኑሮ ሁኔታ እንዳይኖሩ የሚያደርጋቸው ሁኔታዎች

10. ለስኳር በሽታ ከሚሰጡ መድሀኒቶች መካከል የትኛዋቹን በተከታታይ ይወሰዳሉ;

የሚዋጡትን ብቻ □

ኢንሱሊንን ብቻ □

የሚዋጡትን እና ኢንሱሊን □

አመጋገብ እና እንቅስቃሴ በማከናወን ብቻ □

ሌላ (ይገለፅ)_____

11. ባለፉት ሰባት ቀናት ውስጥ የታዛዘሎትን የስኳር መድሀኒት ለምን ያህል ጊዜ ወስደዋል?

አንድ □ ሁለት □ ሶስት □ አራት □ አምስት □ ስድስት □ ሰባት □

12. ባለፉት ሰባት ቀናት ውስጥ የታዛዘሎትን ኢንሱሊን ለምን ያህል ጊዜ ተወግተዋል?(ለኢንሱሊን ተጠቃሚዎች)

አንድ □ ሁለት □ ሶስት □ አራት □ አምስት □ ስድስት □ ሰባት □

13. ባለፉት ሰባት ቀናት ውስጥ የታዛዘሎትን የስኳር እንክብል ለምን ያህል ጊዜ ወስደዋል?(ለስኳር እንክብል ተጠቃሚዎች)

አንድ □ ሁለት □ ሶስት □ አራት □ አምስት □ ስድስት □ ሰባት □

14. በስኳር ህመሙ ምክንያት ያጋጠምዎት ተጨማሪ ተያያዥ የጤና እክል አለ ?

አለ □ የለም □

15. ለጥያቄ ቁጥር 14 መልስዎ «አለ» ከሆነ ያጋጠመዋትን የጤና እክል ምንድነው ?(ከአንድ በላይ መምረጥ ይችላሉ)

ከስኳር ህመም ጋር የተያያዘ የኩላሊት ህመም □

ከስኳር ህመም ጋር የተያያዘ የነርቭ ህመም □

ከስኳር ህመም ጋር የተያያዘ የአይን ህመም □

ከስኳር ህመም ጋር የተያያዘ የልብ ህመም □

ከስኳር ህመም ጋር የተያያዘ የእግር ቁስለት □

ሌላ (ይገለፅ)_____

16. የሰውነት ክብደት _____ ኪ.ግ

17. ቁመት _____ሜትር

18. ቦዲ ማስ ኢንዴክስ _____ኪ.ግ /ሜትር^2

ክፍል ሶስት- የስኳር ህመምተኞች ሊኖራቸው የሚችለውን የኑሮ ሁኔታ

19. ያለዎት የኑሮ ሁኔታ (quality of life) እንዴት ይገለፃል ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም ዝቅተኛ	ዝቅተኛ	መከካለኛ	ከፍተኛ	በጣም ከፍተኛ
1	**2**	**3**	**4**	**5**

20. በጤናዎ ላይ ያለዎት እርካታ እንዴት ይገልፁታል?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም የማያረካ	የማያረካ	መካከለኛ	የሚያረካ	በጣም የሚያረካ
1	**2**	**3**	**4**	**5**

21. የሚሠማዎት ህመም ምን ያክል መስራት የፈለጉትን እንዳያከናውኑ አድርግዎታል ::

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም አልከለከለኝም	በጥቂቱ ከልክሎኛል	በመጠኑ ከልክሎኛል	በጣም ከልክሎኛል	እጅግ በጣም ከልክሎኛል
1	**2**	**3**	**4**	**5**

22. የእለት ተእለት እንቅስቃሴዎን ለማካሄድ ምን ያክል የህክምና እርዳታ ያስፈልገዎታል ?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም አያስፈልገኝም	በጥቂቱ ያስፈልገኛል	በመጠኑ ያስፈልገኛል	በጣም ያስፈልገኛል	እጅግ በጣም ያስፈልገኛል
1	**2**	**3**	**4**	**5**

23. በህይወትህ ምን ያክል ደስተኛ ነዎት?

(የመረጡትን ቁጥር ያክብቡ)				
ፍፁም ደስተኛ አይደለሁም	በጥቂቱ ደስተኛ ነኝ	በመጠኑ ደስተኛ ነኝ	በጣም ደስተኛ ነኝ	እጅግ በጣም ደስተኛ ነኝ
1	**2**	**3**	**4**	**5**

24. ህይወት በእርስዎ እይታ ምን ትርጉም አለው?

(የመረጡትን ቁጥር ያክብቡ)				
ፍፁም ትርጉም አልባ ናት	በጥቂቱ ትርጉም አላት	በመጠኑ ትርጉም አላት	በጣም ትርጉም አላት	እጅግ በጣም ትርጉም አላት
1	**2**	**3**	**4**	**5**

25. በእለት ተእለት ተግባሮት ትኩረት የማድርግ ብቃትዎ ምን ያክል ነው ?

(የመረጡትን ቁጥር ያክብቡ)				
ፍፁም ትኩረት የለኝም	በጥቂቱ ትኩረት አለኝ	በመጠኑ ትኩረት አለኝ	በጣም ትኩረት አለኝ	እጅግ በጣም ትኩረት አለኝ
1	**2**	**3**	**4**	**5**

26. የእለት ተእለት ህይወትዎ ምን ያክል አስተማማኝ ነው?

(የመረጡትን ቁጥር ያክብቡ)				
ፍፁም የሚያስተማምን አይደለም	በጥቂቱ አስተማማኝ	በመጠኑ አስተማማኝ	በጣም አስተማማኝ	እጅግ በጣም አስተምምኝ
1	**2**	**3**	**4**	**5**

27. የሚኖሩበት አከባቢ ምን ያክል ጤናማ ነው?

(የመረጡትን ቁጥር ያክብቡ)				
ፍፁም ጤናማ አይደለም	በጥቂቱ ጤናማ	በመጠኑ ጤናማ	በጣም ጤናማ	እጅግ በጣም ጤናማ
1	**2**	**3**	**4**	**5**

28. ለእለት ተእለት ህይወትዎ የሚሆን በቂ ሃይል አለዎት?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም የለኝም	በጥቂቱ አለኝ	በመጠኑ አለኝ	በአብዛኛው አለኝ	በሚገባ አለኝ
1	**2**	**3**	**4**	**5**

29. የስውነትዎን አቋም አምነው ይቀበላሉ ?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም አልቀበለውም	ብዙም አልቀበለውም	ከሞላ ጎደል እቀበለዋለሁ	በአብዛኛው እቀበለዋለሁ	ሙሉ በሙሉ እቀበለዋለሁ
1	**2**	**3**	**4**	**5**

30. የፈለጉትን አግኝተው ለመኖር የሚያስችል በቂ ገንዘብ አልዎት ?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም የለኝም	በጥቂቱ አለኝ	በመጠኑ አለኝ	በአብዛኛው አለኝ	በበቂ ሁኔታ አለኝ
1	**2**	**3**	**4**	**5**

31. የእለቱ የሚያስፈልግዎትን መረጃ የማግኘት እድል አለዎት ?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም የለኝም	በጥቂቱ አለኝ	በመጠኑ አለኝ	በአብዛኛው አለኝ	ሙሉ በሙሉ አለኝ
1	**2**	**3**	**4**	**5**

32. ለመዝናኛ የሚሆን ምን ያክል ጊዜ አለዎት ?

(የመረጡትን ቁጥር ያክብቡ)

በፍፁም የለኝም	በጥቂቱ አለኝ	በመጠኑ አለኝ	በአብዛኛው አለኝ	ሙሉ በሙሉ አለኝ
1	**2**	**3**	**4**	**5**

33. በአከባቢዎ ለመንቀሳቀስ ምን ያክል አቅም አለዎት ?

(የመረጡትን ቁጥር ያክብቡ)

በፍፁም የለኝም	ብዙም የለኝም	በመጠኑ አለኝ	ጥሩ አቅም አለኝ	በጣም ጥሩ አቅም አለኝ
1	**2**	**3**	**4**	**5**

34. በእንቅልፍ የሚያገኙት እርካታ ምን ያክል ነው?

(የመረጡትን ቁጥር ያክብቡ)

በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

35. የእለት ተእለት ተግባርዎት በማከናወን ብቃትዎ ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)

በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

36. ስራ ለመስራት ባሰቡ ጊዜ የሚኖርዎ አቅም ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)

በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

37. በብቃትዎ ምንያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)

በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

38. ከሰዎች ጋር ባለው ግንኙነት ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)

በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

39. በወሲብ ህይወትዎ ምን ያክል እርካታን ያገኛሉ ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

40. ከጓደኞችህ በሚያገኙት የሀሳብ ድጋፍ ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

41. በኑሮ ሁኔታዎ ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

42. የጤና አገልግሎት መስጫ ተቋማትን ከማግኘት አንፃር ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

43. በመጓጓዣ መንገዶች ምን ያክል ይረካሉ?

(የመረጡትን ቁጥር ያክብቡ)				
በጣም አልረካም	አልረካም	በመጠኑ እረካሁ	እረካሁ	በጣም እረካሁ
1	**2**	**3**	**4**	**5**

44. ምን ያክል ጥሩ ያልሆነ ስሜቶች ማለትም እንደ ተስፋ መቁረጥ፣ ጭንቀት እና ድብርት ተሠምትዎት ያውቃል?

(የመረጡትን ቁጥር ያክብቡ)				
በፍፁም አያውቅም	አልፎ አልፎ	በተደጋጋሚ	ብዙ ጊዜ	ሁልጊዜ
1	2	3	4	5

ስለጊዜዎ እናመሰግናለን::

Annex IV. Information sheet and consent form (English version)

Dear respondent my name is _____ I am here to collect data for a study which entitled with "Assessment of Health related quality of life and its associated Factors among Type 2 diabetic patients, attending Felege Hiwot Referal Hospital in Bahirdar" .It is conducted by Kidist Reba, Who is a MSc student in nursing at Addis Ababa University, College of Medicine And Health Sciences, Department of Nursing & Midwifery. The interview explores about your quality of life and its associated factors will require about 60 to 90 minutes to be completed. As a study participant you will be benefited when the result is utilized. The study will be carried out in the form of interview and do not cause any harm to you. The result will be displayed in general form not in individual. To achieve the study, your honest and genuine participation by responding to the question prepared is very important and highly appreciated. You have also a right to continue or to discontinue as a participant and there is no any influence that insists you to participate unless you are volunteer.

We will proceed to the interview after you understand the following points

Objective of the study: To assess health related quality of life and its associated factors among Type 2 diabetic patients attending in Felege Hiwot Referral Hospital, Bahir Dar City, Ethiopia.

Benefit: The information generated from the study help policy makers and program planning, to improve QOL and will enable health care providers to implement other care beyond metabolic control.

Harm: The participants do not have any harm by participating to the study

Duration of the study and interview: The study conducted for one month. The interview may take from 60-90 minutes.

Alternatives to participation: You do not have to take part in this research if you do not wish to do so. Your participation/ non-participation, or refusal to respond to the questions will have no effect now or in the future on services that you or any member of your family may receive from any service providers. In between, you have the right to terminate from the study by any reason, related to the study or personal reason.

Confidentiality: We would like to assure you that the privacy will strictly be maintained throughout. Your responses to any of the questions will not be given to anyone else and no reports of the study will ever identify you. If a report of the results will be published, only Information about the total group will appear.

Persons to contact: If you have any question you can contact the investigator at the following address and you may ask at any time you want.

Kidist Reba

Tel: +251-0911178889

E-mail: kidistreba@gmail.com

Consent form: I have read the document stated above or it has been read to me by the data collector as I can understand all conditions stated above. Therefore, I have decided to:
1. Agree _____
2. Disagree _____ on participation of the study

And I confirmed it by signature _____

Name of the interviewer: _____Sign. _____ Date of interview_____
Name of the supervisor: _____ Sign. _____ Date_____

Thank You for willingness to participate

PART-II IN- DEPTH INTERVIEW GUIDE FOR PARTICIPANTS

This list of questions will guide the researcher. It doesn't have to be adhered to completely: instead the participant's response will guide the question.

- Project Name:----------
- Interviewer:----------
- Fake Name (ID):----------
- Date:----------
- Start Time:----------
- End Time:----------
- Location:----------

1. Demographic information

Can you please tell me some identifying information about yourself?

- Age:----------
- Sex----------
- Marital status:----------
- Educational status:----------

2. Quality of life related questions
    A. How would you describe your quality of life?
    B. How do you compare the current quality of life to the previous one (non diabetic versus after diabetic)?
    C. What do you think about quality of life in diabetic patients?
    D. How could the quality of life of diabetic patients be improved?
    E. What do you fell the expenses for medical treatment of diabetic mellitus?
    F. How do you perceive your quality of life (health status) compared to other general populations health status?
    G. Explain how DM affects quality of life?
    H. Anything else you would like to add?

Annex V . Information sheet and consent form (Amharic version)

የምርምር/ጥናት/ ማብራሪያና የስምምነት መግለጫ ቅጽ

የምርምር ፕሮጀክቱ

1. *መግቢያ*

እኔ ------------------------------ እባላለሁ ቅድስት ሬባ በተባለች ተመራማሪ በስኳር ህመምተኞች የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማወቅ በተዘጋጀ ጥናት ላይ መረጃ ሰብሳቢ ሠራተኛ ስሆን ይህንንም ጥናት ለማሳካት የእርስዎ ቅንነት የተሞላበት ተሳትፎ ወሳኝነት አለው፡፡ የዚህ የምርምር ማብራሪያና የስምምነት ቅጽ ዓላማ አሁን እርሰዎ እንዲሳተፉበት የምንጠይቀዎተን የምርምር ጥናት ምንነት ማብራራት ነው፡፡ በዚህ የምርምር ፕሮጀክት ለመሳተፍ ከመወሰንዎ በፊት ይህንን የማብራሪያ ቅጽ በጥንቃቄ በማንበብ ጥያቄዎች ካሉዎት ይጠይቁ፡፡ በተጨማሪም በጥናቱ መሳተፍ ከጀመሩ በኃላ በማንኛውም ጊዜ ጥያቄዎች ካሉዎት መጠየቅ ይችላሉ፡፡

2. የምርምር ፕሮጀክቱ ዓላማ

የስኳር ህመምተኞች የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማጥናት የተዘጋጀ ነው፡፡

3. የአሰራር ሂደት

ይህንን ጥናት ዓላማ የተፈለገው ግብ እንዲመታና በጥናቱ መሠረት የሚለዩ የተለያዩ ችግሮችን በመንግሥትና በሌሎች ድጋፍ ሰጪ ድርጅቶች አካላት ትብብር አማካኝነት በጥናቱ የተደረሰባቸውን ችግሮች ለመፍታት እርስዎ እንዲሳተፉ ተጋብዘዋል፡፡ በዚህ ጥናት ውስጥ ለመሳተፍ ከተስማሙ ስምምነቱን በደንብ መረዳትና እንዲሁም መፈረም ይገባዎታል፡፡ ከዚያ በመቀጠል በጥናቱ መረጃ ሰብሳቢዎች ለሚጠየቁት ጥያቄ እንዲመልሱ ፈቃደኝነትዎ ይጠየቃል፡፡ በዚህ ጥናት ሲሳተፉ የሚሠጡት መልስም ሆነ የሚገኘው ውጤት በምስጢር ይጠበቃል፡፡

4. ሊከሰቱ የሚችሉ ስጋቶችና ምቾት መጓደሎች

በዚህ ጥናት መሳተፍዎ ምናልባት ጊዜዎን ሊሻማብዎ ይችል ይሆናል፡፡ ነገር ግን የጥናቱ ውጤት ወደፊት ከሚሠጠው ጥቅም አንፃር ይህን ያህል አይደለም፡፡ በዚህ ጥናት በመሳተፍዎ ምንም ዓይነት ስጋት (ችግር) አያጋጥምዎትም፡፡

5. ጥቅሞች

በዚህ ጥናት በመሳተፍዎ የተለየ ጥቅም አያገኙም፡፡ ነገር ግን የርሰዎ በጥናቱ መሳተፍዎ ለጥናቱ መሳካት በጥናቱ በተለያዩ ችግሮች መፍትሄ ሲሰጥ እረስዎ እና ሌሎች ታማሚዎች ተጠቃሚ ይሆናሉ፤፤

6. ማካካሻ

በዚህ ጥናት በመሳተፍዎ ምንም ዓይነት ማካካሻ አይሠጥዎትም፡፡ ነገር ግን በጥናቱ በመሳተፍዎ ምስጋናችን ከፍተኛ ነው፡፡

7. ምስጢር ስለመጠበቅ

ከዚህ ጥናት የሚገኝ መረጃ በሙሉ በምስጢራዊነት ይጠበቃል፡፡. ለዚህ ጥናት የሚሠበሰበው እርሰዎን የሚመለከት መረጃ በማህደር የሚቀመጥ ሲሆን ማህደሩም በስመዎ ሳይሆን በተለየ ኮድ ሲቀመጥ ኮዱ ከዋናው ተመራማሪ ውጭ ለማንም አይገለጽም፡፡

8. በጥናቱ ያለመሳተፍ ወይም ራስን የማግለል መብት

በጥናቱ ላለመሳተፍ ከፈለጉ በዚህ ጥናት ያለመሳተፍ ወይም ከአንድ በላይ ወይም ሁሉንም ጥያቄዎች አለመመለስ ይችላሉ፡፡ በዚህ ጥናት ባለመሳተፍዎ ወይም በከፊልም ሆነ በሙሉ ጥያቄዎችን ባለመመለስዎ ማንኛውንም አገልግሎት ከማግኘት አይከለከሉም፡፡

9. የሚገናኟቸው ሠዎች

በጥናቱ ዙሪያ ማንኛውም ጥያቄ ካለዎት ከሚከተሉት ውስጥ ማንኛውንም ሠው በሚፈለጉት ጊዜ ማነጋገር ይችላሉ፡፡

45. **ቅድስት ሬባ - አዲስ አበባ** ዩኒቨርሲቲ

ሞባይል ቁጥር - 0911178889

ከላይ በዝርዝር የተሰጡትን መረጃዎች እና ቅፁን አንብቤዋለሁ ወይም ልረዳ በምችለዉ መልኩ በ መረጃ ሰብሳቢዉ ተነቦልኛል፡፡ ስለሆነም በ ጥናቱ ላይ ስለመሳተፍ የሚከተለዉን ወስኛለሁ

1. ተስማምቻለሁ _____

2. አልተስማማሁም _____

ይህንንም በፊርማየ አረጋግጣሁ _____

የመረጃ ሰብሳቢዉ ስም _____ ፊርማ _____

መረጃዉ የተሰበሰበበተ ቀን_____

የመረጃ ተቆጣጣሪ ስም _____ ፊርማ _____

ይህ መጠይቅ በፈለገ ህይወት ሪፈራል ሆስፒታል የስኳር ህመምተኞች ሲኖራቸው የሚችለውን የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማጥናት የተዘጋጀ ነው።

- የጥናቱ ስም: ህመምተኞች የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያ ለማወቅ በተዘጋጀ ጥናት
- ጠያቂ:-----------------------------------
- የመለያ ቁጥር:-----------------------------
- ቀን:---
- የተጀመረበት ሰአት:-----------------------------------
- ያለቀበት ሰአት:-------------------------------------
- ቦታ:--------------------------------------

1. **ስነ ህዝብ መረጃ**

- ዕድሜ:---------------------
- ፃታ---------------------
- የጋብቻ ሁኔታ:-----------
- የትምህርት ደረጃ:-------------

2. **የስኳር ህመምተኞች ሲኖራቸው የሚችለውን የኑሮ ሁኔታ እና ተዛማጅነት ባላቸው ጉዳዮች ዙሪያለማጥናት የተዘጋጀ ነው**

ሀ. የእርስዎን አጠቃላይ አኗኗር(የኑሮ ሁኔታ) እንዴት ይገልጹታል?

ለ. የስኳር ህመምተኛ ከመሆንዎ በፊት የነበረው እ ከሆኑ በኂላ ያለዎትን የአኗኗር (የኑሮ ሁኔታ)እንዴት ይገልጹታል?

ሐ. ስለስኳር ህመምተኞች የኑሮ ሁኔታ ምን ይላሉ ?

መ. በእርስዎ እምነት የስኳር ህሙማን የኑሮ ሁኔታ በምን መልኩ የተሻለ እንዲሆን ማድረግ ይቻላል?

ሰ. በስኳር ህመም ምክንያት ለህክምና የሚወጣውን ወጪ በተመለከተ ምን ይሰማዎታል?

ረ. ከሌላው ማህበረሰብ ጋር ሲነጻጸር የእርስዎን የአኗኗር ሁኔታ እንዴት አገኙት (እንዴት ተረዱት)?

ተ. የስኳር በሽታ በኑሮዎ ሁኔታ ላይ ያለውን ተጽእኖ እንዴት እንደሆነ ይግለፁ?

ሸ. ተጨማሪ ሃሳብ ወይም አስተያየት ካለዎት?

Assurance of principal investigator

I signed to accept all responsibilities for the scientific and ethical conduct of the research project. I will provide timely progress report to my advisor and seek the necessary advice and approval from my primary advisors in the course of the research. I will communicate timely to my adviso0rs and all stakeholders involved in the study including any source of funding and support for this research.

Name of the student: Kidist Reba

Signature: _____

Date: _____

Advisor Mr. Zeleke Argaw (RN,MSC.)

Signature: _____

Date: _____