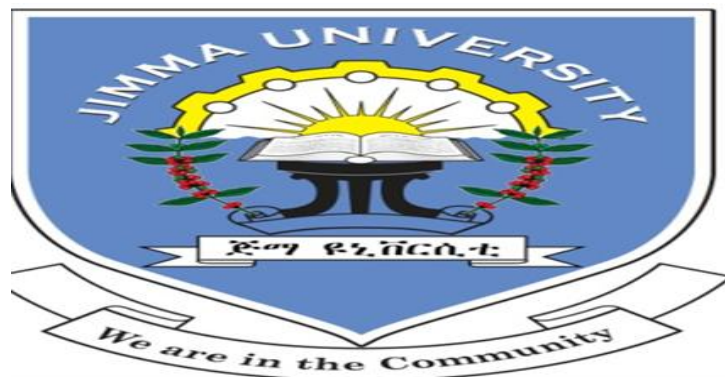**HEALTH RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG HYPERTENSIVE PATIENTS ON FOLLOW UP IN JIMMA UNIVERSITY SPECIALIZED HOSPITAL, JIMMA, SOUTH WEST ETHIOPIA, 2014**

By:

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A THESIS SUBMITTED TO JIMMA UNIVERSITY, COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES, DEPARTMENT OF NURSING; IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR MASTERS OF SCIENCE, DEGREE IN ADULT HEALTH NURSING

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JIMMA, ETHIOPIA

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES

DEPARTMENT OF NURSING

HEALTH RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG HYPERTENSIVE PATIENTS ON FOLLOW UP IN JIMMA UNIVERSITY SPECIALIZED HOSPITAL, JIMMA, SOUTH WEST ETHIOPIA, 2014

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ABSTRACT

Background: *Worldwide, hypertension is common and now regarded as a major public health problem. It is a leading cause of death in developing countries. Health related quality of life has gained increased attention as an outcome measure of interventions and treatments in patients with established Cardiovascular diseases. Thus, measure of Health related quality of life is recommended as appropriate intervention for peoples with chronic illness. However, there is no study conducted on health related quality of life and associated factors among hypertensive's in study area. `*

Objective*:-The aim of this study was to assess health related quality of life and associated factors among hypertensive patients following hypertension clinic at JUSH.*

Methods*: An institution based Cross sectional quantitative study was conducted from March 1 to April 1, 2014 with a total sample size of 322 and the subjects was identified using systematic sampling technique. Data analysis was computed using SPSS version 16.*

Result:- *Finding from this study revealed that profile of domains of health related quality of life mean score were a little above average that showed physical functioning (58.58 ±29.8), role physical (54.7±43.7), role emotional (57.45±44.82), vitality (57.01 ± 13.65), mental health (61.42 ±13.19), social functioning (74.61± 24.12), bodily pain(74.67 ± 25.46) and general health (51.66 ± 15.12). Results from Multiple Linear Regression showed that, being female, farmer and presence of co morbid were related to lower Physical, mental component summary and total quality of life score while better hypertension self care practice were positively associated with Physical, mental component summary and total quality of life score. Respondents encountered drug side effect had lower Physical component summary where as presence of complication had related to lower mental component summary and total quality of life score.*

Conclusion and recommendation:- *This study highlighted that Sociodemographic and disease-related as well as self-care practices were strongly associated with Health related quality of life. The study findings reccommend Ministry of health and clinician to measure health related quality of life for improving health related quality of life as outcome of intervention.*

Keywords: Health related quality of life, physical and mental component summary

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At last but not the least, my acknowledgment goes to data collectors and respondents without whom this thesis would not came to be realized

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LIST OF ABREVIATIONS /ACRONYMS

BP-bodily pain

CVD- Cardiovascular disorder

DASH- Dietary Approach to Stop Hypertension

GH-general health

HBP- High blood pressure

HRQOL- Health related quality of life

JUSH- Jimma University Specialized Hospital

MCS-mental component summary

MH-mental health

PCS- physical component summary

PF-physical functioning

QOL- Quality of life

RE-role emotional

RP- role physical

SF- social functioning

SF-36- Short Form 36

TQOL- Total quality of life

VT-vitality

WHO- World Health Organization

CHAPTER ONE: INTRODUCTION

1.1 Background

Hypertension is defined as systolic blood pressure greater than 140 mm Hg and a diastolic blood pressure greater than 90 mmHg over a sustained period, based on the average of two or more blood pressure measurements taken in two or more contacts with the health care provider after an initial screening (1).

Worldwide, hypertension is common and now regarded as a major public health problem(2). It is an overwhelming global challenge and analysis of the global burden of hypertension revealed that over 25% of the world's adult population had hypertension in 2000, and the proportion is expected to increase to 29% by 2025(3).

Hypertension is usually a chronic disease which can lead to long term complications and it is the leading cause of death and the second leading cause of lost disability adjusted life-years worldwide (4).

Hypertension is a leading cause of death in developing countries. According to the World Health Organization, more than 80% of deaths from hypertension and associated cardiovascular diseases now occur in low and middle-income countries and this is particularly common among people of low socio-economic status (5). Such deaths occurring among economically productive age groups undermine socio-economic development of families in particular, and the country involved in general (6).

In sub-Saharan Africa, the prevalence of hypertension once thought to be low, has now assumed epidemic proportions. About 10 to 20 million people are affected with hypertension in the region(7).

The epidemiology in Ethiopia is not well studied. Some community-based surveys have shown the prevalence of hypertension in the country varies from 1.8% in the rural community 15 to 30% in urban areas of Addis Ababa and Gondar (8).

WHO data published in April 2011 reported Hypertension Deaths in Ethiopia reached 9,743 or 1.19% of total deaths. The age adjusted Death Rate is 29.89 per 100,000 of population ranks Ethiopia #72 in the world (9).

The research team from Jimma conducted a cross sectional study of chronic disease and risk factors for chronic disease in 4,469 adults from the population around Gilgel Gibe Field

Research Centre using the WHO's STEPS protocol found an overall prevalence of chronic disease of 8.9% (DM 0.5%, CVD 3%, hypertension 2.6%, asthma 1.5%, epilepsy 0.5%, depression 1.7 (10).

Special interest in Quality of Life first appeared in medicine in the 1970s and served to describe the health and non-health consequences of chronic disease. It also served to measure the clinical and non clinical effects of physician interventions as well as general healthcare. Interest in QoL was related directly to new approaches in measuring the effects of treatment not only through assessing longevity (e.g., after a particular treatment), but also by measuring the "quality" of the life which was extended as a result of successful therapy (11).

Reasons for rapid development of QOL measures in healthcare has been the growing recognition of the importance of understanding the impact of healthcare interventions on patients' lives, rather than just on their bodies which is important for patients with chronic, disabling, or life-threatening diseases, who live without the expectation of cure and with conditions that are likely to impact on their physical, psychological, and social wellbeing (12).

Widely accepted definition of HRQOL is the value assigned to the duration of life as modified by the impairments, functional states, perceptions and social opportunities that are influenced by disease, injury, treatment or policy (13).

 HRQOL has gained increased attention as an outcome measure of interventions and treatments in patients with established cardiovascular disease. For individuals at risk for developing CVD, HRQOL measurement has been considered particularly useful because of two major reasons: As these individuals may be asymptomatic or have only mild symptoms over a long period of time, morbidity or mortality alone are insensitive measures of the impact of therapy, whereas HRQOL outcomes can help select therapeutic options. Secondly, it may be difficult for these individuals to consider an asymptomatic illness as serious and to be aware of the benefit of medical treatment, especially if side effects of drugs may impair their life satisfaction (14).

HRQOL were measured using SF-36 survey instruments that was constructed to achieve two well-accepted standards of comprehensiveness: 1) representation of multidimensional health concepts; and 2) measurement of the full range of health states, including levels of well-being and personal evaluations of health (15).

1.2 Statement of the problem

Hypertension is a highly prevalent and an important risk factor for cardiovascular diseases, which are responsible for roughly 30% of deaths worldwide(16). Hypertension is a chronic disease that requires drug and non-drug treatment for life, and its chronicity may interfere directly in several spheres of the patients' life (17).

Advances in medicine have prolonged the life of many people with chronic diseases. Chronic diseases may not kill but they consume a lot of health care resources and threaten the quality of life of the sufferers. The ultimate goal of modern health care for patients with chronic disease is not only to delay death but also to promote health and quality of life. It has also been found to be predictive of health service utilization and mortality (18).

Individuals with chronic diseases experience a complex array of symptoms and functional impairments that may affect their day-to-day living and create seismic-like change in self-perception and perceptions of health and quality of life (QOL). The burden of one disease may be complicated by the burden of other health conditions. In addition, characteristics such as age, gender and socioeconomic status may attenuate or worsen the impact of chronic conditions upon QOL (19).

The dramatic increase of death in average age has brought the attention that, longevity should be accompanied with improvements in health-related quality of life (HRQOL). Some researchers indicated that, increasing life expectancy will lead to an increase in the proportion of people living in poor health with the consequent burden on society and health care services. The World Health Organization (WHO) has summarized these concerns, stating that, "adding years to life is an empty victory without adding life to years"(WHO, 1998) (20).

A study conducted by Wilson & Cleary proposes that physiologic changes due to illness or treatment, lead to symptoms, which in turn influences functional status or HRQOL. These relationships are influenced by patient and environmental variables that may affect patient perception of symptoms and changes in HRQOL (21).

Another study reported that impaired HRQoL in hypertensive patients might be secondary to the awareness of hypertension, the adverse effects of drugs, or the presence of concomitant

diseases, and not high BP per se (11) (22). Although hypertension, especially in mild to moderate stages, is usually considered as an

asymptomatic condition, its association with alterations in well-being and health-related quality of life (HRQOL) is still a controversial issue (16). A studies of HRQOL among hypertensive individuals have been conflicting, with some studies finding worse HRQOL among hypertensive's compared to the general population and some finding no impact of hypertension on HRQOL in some or all domains (23).

Despite advances in knowledge, few HRQOL studies have taken place in large populations of subjects with hypertension. Most studies focusing on hypertensive subjects describe the influence of antihypertensive drugs on various domains of HRQOL and, in many of these studies, the assessment of HRQOL was a secondary objective. Moreover, HRQOL is determined by several factors, and changes can seldom be explained by drug effects alone (11). Thus since there is no study conducted before in our country regarding this issue, the aim of this study is primarily to assess HRQOL among hypertensive patients and to determine factors that may affect HRQOL like Socio-demographic factors, medical related factors, hypertension self-care practice and institutional care.

Chapter Two

2.1 Literature Review

Hypertension and health-related quality of life

Most hypertensive subjects do not report any symptoms, so evaluating their HRQoL is a complex and multidimensional process. In this group, valuable data can be obtained on their emotional wellbeing, physical functioning, fulfillment of social roles, and other issues arising during treatment, as well as the way they perceive their own health (11).

The meta-analysis observational study identified lower scores in hypertensive patients for physical [−2.43; 95% confidence interval (CI) −4.77 to −0.08] and mental (−1.68; 95% CI −2.14 to −1.23) components. QOL was lower in the 8 domains of the SF-36: physical and social functioning, role physical and emotional, bodily pain, general health, vitality and mental health (24).

A cross-sectional study done in Nigeria on 265 participants reported that the Physical Functioning domain mean score was far below average. Role Physical and Role Emotional domains were a little above average. Other domains were far above average. Role Physical (p = 0.043), Role Emotional (p = 0.003), Vitality (p = 0.014) and Mental Health (p = 0.034) domain mean scores for patients with controlled BP were significantly higher than patients with uncontrolled BP (25).

Sociodemographic factor

Study conducted in Sweden revealed that women generally reported lower scores in the domains intended to measure physical health. Among both men and women, those in the older ages rated lower scores in all physical dimensions. Income was the Sociodemographic factor of greatest importance. The scores were higher for those with higher income. Education level was significantly related to higher scores in physical functioning and bodily pain (only among men). Physical functioning and bodily pain were significantly higher among those in higher social groups. Divorced women rated lower in general health scale than did married women or cohabiters'.

Women also rated lower scores in the domains intended to measure mental health. Income level was related to higher scores in all mental dimensions among both men and women. Being single, divorced, or widowed was associated with lower scores for most domains when compared with married persons or cohabiters'. Unemployed men rated significantly lower in social functioning, role-emotional, and mental health, whereas unemployed women only rated lower mental health (16).

Another study reported that QOL was higher among married and divorced than widowed subjects, showing that, the physical domain was in favor of the divorced but, the Psychological and Social domains were in favor of the married patients(20). Regarding educational status A higher level of education among the study participants also meant higher HRQoL scores in the domain when these were compared to participants who had not finished elementary school. In the grouped SF-36 scale, it was observed that patients with a higher level of education had higher HRQoL scores in PCS (26).

Study conducted in Pakistan reported that the relationship between education and HRQoL provides significant association with highest influencing beta value; hence, predicting an increase in overall HRQoL with an increase in the educational status of patients. The study reported that significant difference on quality of life was found in an occupation where respondents with private jobs had significant relation with those who were jobless and government officials (27). Again study done by Ellayan revealed that QOL is higher among literate subjects than illiterate and males enjoy a better quality of life than female do (20). A cross-sectional Study conducted in Palestine concluded that specific socio- demographic and disease-related characteristics of hypertensive patients as well as treatment factors were strongly associated with HRQOL(28).

Medical factors

An observational cross-sectional exploratory study carried out in hypertensive patients done by Carvalho reported that, when comparing HRQOL of patients with controlled BP to those with uncontrolled BP using SF-36, no significant difference was observed (26).
The results of a study conducted in Germany on hypertensive patients with stroke and without stroke showed that self- reported QOL is poorer in patients with stroke than in hypertensive

patients. Male gender appears to be a strong predictor of quality of life in patients either with hypertension or stroke. Follow up health care programmes are essential for good quality of life among both patient groups. Diet, physical exercise, low level of stress are important factors for enhanced QOL (29).

Evidence from Ogunlana study showed that conditions showing a poor prognosis (myocardial infarction, unstable angina, cardiac arrhythmias, valve replacement surgery) have a negative impact on the emotional component of the life quality assessment questionnaire. Other conditions such as heart failure, diabetes, asthma, anemia, adversely affect the patient's physical function (25).

A study done in Malaysia also reported that after adjusting for Sociodemographic variables (age, gender, education and employment), SF-36 scores in the presence of diabetes mellitus and cardiovascular morbidity were comparably limited and had statistically significant lower HRQOL than patients without co morbidities (30). Increasing blood pressure ($p = 0.005$), the presence of stroke ($p = 0.008$) and visual impairment ($p = 0.015$) were significant negative predictors of the overall HRQOL in hypertensive patients (25). Another study reported that lower scores on all components and domains were found among men and women with controlled hypertension when compared with normotensive individuals or those with un-controlled hypertension (31).

A study in Brazil using both the Bulpitt and Fletcher's Questionnaire and the SF-36 assessment on hypertensive patients with and without complications concluded that hypertensive patients without complications had a HRQL score significantly higher ($p<0.05$) than patients with complications in the functional capacity (80.88 ± 16.83 vs. 75.00 ± 20.68), bodily pain (72.00 ± 22.0 vs. 59.73 ± 20.68), and vitality (56.25 ± 16.67 vs. 47.57 ± 17.50) domains (32).

Study conducted in Egypt revealed that considering patients' medical condition as well as drug factors, after controlling for demographic characteristics and co morbid conditions, the full factorial analysis of covariance identified that achieving blood pressure control, absence of complications and absence of drug side- effects as independent predictors of higher scores on the Hypertension Health Status Inventory. These factors explained 30.2% of the variability in patients' score on the quality of life scale (33).

Age, length of current drug therapy, and SDC (symptom distress count) all had negative influences on the physical-related HRQOL score (PCS), with older age, longer therapy, and greater number of reported symptoms being associated with lower scores. Women reported more symptoms and had lower mental-related HRQOL (MCS) scores than men (34).

Study from Poland revealed that results of multivariate regression analysis adjusted for BP control revealed that PCS score was more strongly associated with age, presence of multiple co morbidities and duration of antihypertensive therapy, whereas MCS score was more strongly associated with multiple co morbidities and number of antihypertensive drugs (35).

Well-designed clinical studies in Poland on large groups of subjects have confirmed that medicines currently used to decrease BP significantly increase longevity in hypertensive individuals even though various side effects (e.g., reduced wellbeing and/or psychomotor function) appear in the course of treatment can lead to changes in lifestyle and affect HRQOL (11).

Cross- sectional Observational Study reported that number of doses of the medication to adherent group had a better HRQOL score for one and three doses (1 dose: p 0.0001 and 3 doses: p 0.0002) (36). However another cross-sectional study conducted in Brazil reported that Participants with hypertension and not using BP drugs had higher HRQOL scores (PCS 49.6; MCS 51.9) than those using BP drugs either with uncontrolled (PCS 45.3; MCS 49.4) or controlled BP (PCS 46.2; MCS 47.7; P<0.05) that leads to lower rates of adherence to treatment (37).

Study conducted by Erickson reported that , patients experiencing drug- related side effects in association with their treatment for hypertension reported the lowest assigned value for HRQOL, using utility analysis, of all patients in the study (34). Study done by *Youssef* also reported the unfavorable consequences of hypertensive drug side-effects on quality of life, particularly in the physical and emotional domains(33).

Compliance to Self-care practice

A Study regarding Socio-demographic variables reported that adherent men (p_0.005), adherent women (p 0.0001), Adherent married people and widows (p 0.0005, p 0.0004) and adherent patients with college degree (p 0.0004) to pharmacological and non pharmacological therapy had a better HRQOL compared to the contrary. Considering the life style, adherent

patients who followed an exercise and diet plan had a better HRQoL score than patients who did not (36).

Smoking is associated with hypertension when it is chronic and heavy. Taking more sodium than needed increase the blood pressure. In the Dietary Approach to Stop Hypertension (DASH) trial, participants were fed meals with varying salt levels for more than 4 weeks. For both DASH and traditional diets, the lower the salt intake the lower was the blood pressure and better quality of life (38).

The additive efficacy of DASH diet on antihypertensive treatment for the evaluation of the QOL with randomized clinical trial carried out in 201 patients with mild to moderate hypertension, of them 102 patients were randomly assigned to receive the AT II receptor blocker candesartan, while 99 patients were assigned to follow the DASH diet in addition to the same dose of candesartan. The QOL parameters improved with the combination of candesartan and DASH diet were: mental health, emotional status and vitality (39).

Quasi-experimental study was performed on 90 patients with chronic primary hypertension on effect of Self - Care Education on Quality of Life in Patients by allocating the patient in to lecture group, educational package and control group. Mean scores of QOL dimensions of the intervention groups were increased at the end of the study, except for bodily pain. However, in the control group, the mean differences were negative or very low positive in the dimensions. Significant difference were observed between the control group and the two intervention groups (p<0.05) (40). It gives emphasis for clinician to consider self care education even though it is conducted with small sample size.

2.2 Conceptual frame work

Socio-demographic variables
- ✓ Age,gender, education,occupation,Maritalstatus, Family income

Hypertension care
- Hypertension self-care
- Institutional care

Medical related factors
- ✓ Duration of hypertension,
- ✓ complication, co morbidity, side effect, BP control, BMI

- **Health Related Quality Of Life**
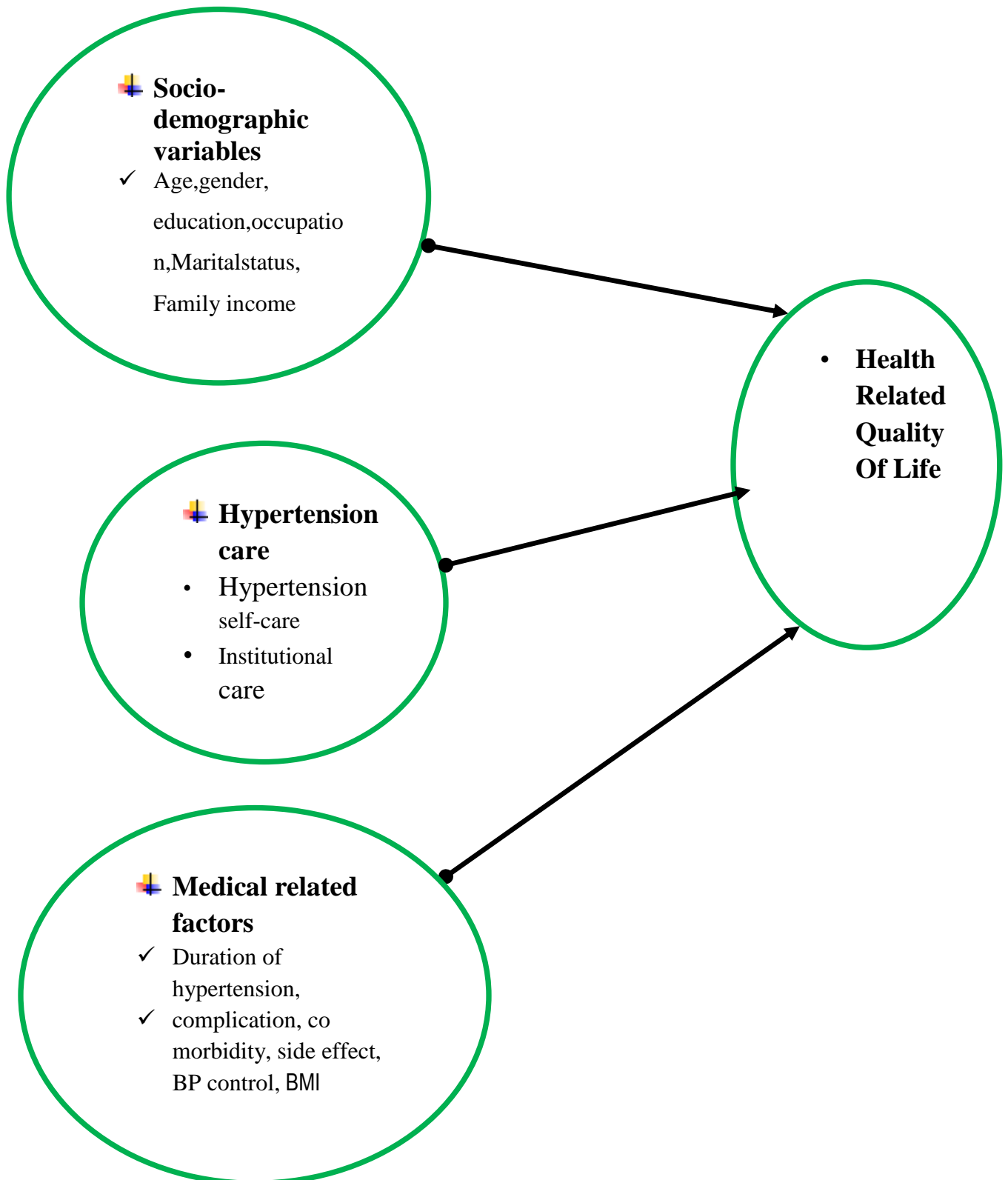
Figure 1 : Conceptual framework of the study developed after searching for literature

2.3 Significance of the study

This study sought to examine various factors responsible for poor and better health related quality of life in the research context and elucidated relationships existing between them.

HRQOL measurements are helpful as a guide to policymakers, health service researchers, epidemiologists, program evaluators, and clinicians interested in the effects of interventions. Patients themselves, their family members and employers can benefit too from information about which areas of life the patient is most comfortable with and which may need more focused therapy (41).

Ultimately, it is envisioned that the implementation of effective strategies related to quality of life of hypertensive patients would lead to improved health related quality of life.

Information from this study will inform healthcare practitioners about the physical and mental wellbeing of their patients and overall functionality. This will increase their suspicion index of detecting illness, thus enhancing the quality of service provided to their patients.

Lastly since there is no research conducted at country level this study can be used as resource for other studies to be conducted related to hypertension.

Chapter three

Objectives

3.1 General objective

Assesment of health related quality of life and associated factors among hypertensive patients following hypertensive clinic at JUSH, 2014.

3.2 Specific objectives

1. To determine profile of health related quality of life among hypertensive patients.

2. To identify associated factors of health related quality of life among hypertensive patients

Chapter Four

Methods and Materials

4.1 Study area and period

This study was conducted in Jimma University Specialized Hospital (JUSH) which is found in Jimma town. The town is located 352 kms south west of Addis Ababa. The town is divided in to 13 kebeles. JUSH is the only teaching and referral hospital in the southwestern part of the country. It has bed capacity of 515 beds and a total of more than 750 supportive and professional staffs. It provides services for approximately 9000 inpatient and 80000 outpatient attendants a year. As one of the outpatient services, the hospital has specialty clinics where patients with specific chronic disease are referred for follow-up. Hypertension clinic is one of those clinics which give service for patients with hypertension disorder. The clinic currently gives service for about 1342 hypertension patients. On average 100 -130 patients are visiting the clinic in a day. The clinic is staffed with internist, residents and nurses who are trained in specific chronic disease patient follow-up. The study was conducted from March –May, 2014 G.C.

4.2 Study design

An institution based Cross sectional study was conducted.

4.3 Population

4.3.1 Source population

All hypertensive patients attending hypertension clinic of JUSH for follow up.

4.3.2 Study population

Hypertensive patients on follow up in chronic illness clinic of JUSH who fulfill the inclusion criteria.

4.3.3 Inclusion criteria

➢ Age greater than18 years
➢ Put on treatment for at least 3 months.

4.3.4 Exclusion criteria

➢ Patients who are too sick to be interviewed
➢ Patients who have a disease like mental illness that impair their perception

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4. 4 Sample size and Sampling technique/ procedure

4.4.1 Sample size

The sample size was determined using sample size determination for estimation of a single population proportion formula as follows.

$$n = \frac{(Z a/2)^2 \, P \, (1\text{-}P)}{D^2} = \frac{(1.96)^2 \, 0.5(1\text{-} 0.5)}{(0.05)^2} = 384$$

P = Estimate of % hypertensive patients who are in lower health related quality of life (50%)

D = Margin of sampling error tolerated- 5% (0.05)

α = Critical value at 95% confidence interval of certainty (1.96)

Since the source population was 1342 that is below 10,000 finite population correction is needed. The result after the correction becomes 298 and adding non response rate of 10% the total sample size becomes 328.

4.4.2 Sampling technique/ procedure

Patients 'card numbers were used to get a sampling frame. A week before data collection period, list of patients who were appointed for 2 months of data collection period from source population was obtained (960) patients and considered as sampling frame. The list of patients' card numbers was arranged based on the day of their appointment starting from first week of data collection up to the last week (week 8). Calculating Kth value which was every 3 patients and the starting point was randomly selected from first week of data collection period and followed by using systematic sampling technique to obtain the required sample.

4.5 Study variables

4.5.1 Dependent Variables

- Health related quality of life

4.5.2 Independent variables

- Socio-demographic variables like age, Sex, marital status, ethnicity, income, occupation,

- Medical factors like duration of diseases, complication, comorbidity, side effect treatment, blood Pressure control , BMI

- Hypertension care like compliance to self-care, institutional care

4.6 Data collection procedures (instrument, personnel, data quality control)

4.6.1 Data collection instrument

The data was collected using pre tested structured questionnaire and by reviewing patient chart. The structured interview questionnaire that takes 25 minutes with closed-ended questions and predetermined response options was developed specifically for the study. The questionnaire has 5 parts, HRQOL instruments (SF-36), Sociodemographic, medical factors, adherence to hypertension self-care and institutional care.

The Short Form-36 (SF-36) Health Survey was used to assess HRQOL. It is a well-validated instrument used in hypertension studies with a multidimensional questionnaire, composed of 36 items, and it covers eight domains (subscale) of health: Physical functioning, Role physical, bodily pain, general health, vitality, Social functioning, Role emotional ,mental health and two summary score, physical and mental health summary scores. It can be administered in 5-10 minutes with a high degree of acceptability and data quality.

Each scale is directly transformed into a 0-100 scale on the assumption that each question carries equal weight. Each of the subscale scores has a range of 0-100 with a score of zero equivalent to maximum disability or worst quality of life and a score of 100 equivalent to no disability or a high quality of life scoring system were listed on annex III for domain score.

Physical component summary score, mental component summary and total quality of life were obtained using principal component analysis. Physical component summary score were obtained from domains that contribute more like physical functioning, role physical, bodily pain and general health while the mental component summary score were obtained by domains that contribute more like mental health, role emotional, vitality and social functioning. Total quality of life were obtained from all domains that contribute to health related quality of life (42).

Compliance with lifestyle modifications was measured with a Compliance to Lifestyle Modification Instrument that contain 11 closed-ended items on a four point Likert type scale. The rating were 4=daily, 3=frequently, 2=rarely,1= never

It was treated as continuous variable that, the higher the score is related to increased compliance to life style modification that indicates high hypertension self care practice while the lower score is related to decreased compliance to life style modification that indicates low hypertension self care practice. The reliability test (cronbach's alpha)were done for the tool which was 0.80.

Institutional care:-In order to determine institutional care, respondents was asked 19 satisfaction questions and Likert's five points rating scale was used for measuring satisfaction. The rating were, 5 = Strongly agree, 4= Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly disagree. The satisfaction score was set for each respondents and treated as continuous variable. Those respondents securing a higher satisfaction score was related with increased satisfaction or they get high institutional care while those securing lower satisfaction score was related with decreased satisfaction or they get lower institutional care. The reliability test (cronbach's alpha)were done for the tool which was 0.86.

4.6.2 Data collection personnel

The data was collected by 5 nurses working in JUSH other than chronic illness department through face to face interview and record review. One supervisor was assigned at the time of data collection.

The data was collected every Wednesday; a day hypertension patients come for follow up by using a pre tested structured questionnaire at Shanan Gibe hospital and by reviewing patient chart. The patients were interviewed after they get the service they required from the hypertension clinic. Also Patients charts were reviewed by using structured instrument. The items are formulated in a manner that elicits the required data from the chart.

4.7 Data analysis procedure

Data collected was edited, coded, entered using Epidata3.1, cleaned and was exported to SPSS version 16 for analysis. Frequency distribution was used to organize the data and present the responses obtained. Measures of central tendency was calculated and utilized for appropriate variables to describe the data. Comparison of mean score using independent t-test and one way

anova was used for domains of health related quality of life with Sociodemographic and clinical variable. After assumption checking Multiple linear regression analysis was used to predict factors which affect health related quality of life score (dependent variable) applying stepwise selection methods. Dummy variables were prepared for categorical variables (were dichotomized) for the purpose of the multiple linear regressions. Univariate and bivariate analysis was done followed by multivariate analysis. P-value $\leq$ 0.05 was considered statistically significant in multivariate analysis. Finally the result was displayed using charts, graphs and tables.

4.8 Data quality management

Questionnaire was prepared in English and translated to Amharic & Afaan Oromo and re translated back to English. Five BSc nurse data collectors were trained ahead of the actual data collection period. The training focused on familiarizing interviewers with the questionnaire and giving them the opportunity to practice using it. This also included holding discussion about different sections of the questionnaire, using question by question description of the questionnaire. Data collectors practiced interviewing to identify any possible problems and to take remedial measures.

Questionnaire was pre-tested on 5% of sample a week before actual data collection period in Shanan Gibe hospital and after pre-test necessary modification was done. At time of data collection filled questionnaires were checked for completeness and consistency of information by the supervisor on daily basis and typographic errors were manually edited. Any ambiguity and other problems of data collectors were addressed by communicating with the supervisor before the following week.

4.9 Operational definition

QOL has been defined by WHO as *"individuals' perception 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"*.

Health related quality of life- is a subjective measure of an individual's health that includes domains related to physical, mental, emotional and social functioning using standardized instruments.

Physical component summary:- Those subscales correlate most highly with the physical component and contribute most to the scoring of the Physical Component Summary (PCS) measure such as physical functioning, role physical, bodily pain, and general health.

Mental Component Summary:- Those subscales correlates most highly with the mental component and contribute most to the scoring of the Mental Component Summary (MCS) measure such as vitality, social functioning, role emotional and mental health.

Total quality of life score:- obtained using principal component analysis from all domain health related quality of life.

Description of SF-36 questionnaire by John Ware Jr includes the following areas of assessment

Scale (domains)	Number of items	Description
Physical Functioning	10	reflects the levels and types of limitations between the margins of a physical activity
Role-Physical	4	reflecting physical incompatibilities with negative impact on daily and socio-professional activities.
Bodily Pain	2	assesses physical pain intensity and its impact on daily activities;
General Health	6	Assess the patient's perceptions and expectations regarding their health status
Vitality	4	highlights changes in the wellbeing of patients.
Social Functioning	2	Assesses the impact of sickness / health on an individual's social activities.
Role-Emotional	3	Assess the emotional impact the disease has on the individual activity
Mental Health	5	Assess the general effect of mood and psychological wellbeing including his/her past experience

Compliance with the lifestyle modification regimen: measured using compliance to life style modification of 11 items with 4 likert scale that comprises of domains like sodium and fat diet, exercise, alcohol consumption, smoking, weight management, and stress .

Institutional care:-is the service provided to the patient in chronic illness clinic. One of the indicator for institutional care is patient satisfaction which help as to know institutional care provided to the patient that directly related to satisfaction with physician recommendation and health related quality of life.

4.10 Ethical consideration

Ethical clearance letter was initially obtained from ethical review committee of JU College of public health and medical sciences. The respondents were informed about the purpose of the study, and their oral consent was obtained. The respondents' right to refuse or withdraw from participating in the interview were fully maintained and the information provided by each respondent was kept strictly confidential

4.11 Dissemination plan

The result of the study will be communicated to Jimma University college of Public Health and Medical Sciences Graduate School, Department of Nursing and to concerned bodies in the study area. Finally an effort also will be made to publish in a peer reviewed reputable journal.

CHAPTER FIVE

RESULTS

From a total sample of 328 study subjects 322 were interviewed and gives a response rate of 98.17% response rate.

Socio demographic characteristics

As listed in table 1   out of 322 respondents, 176(54.7%) and 146 (45.3%) were male and female, respectively. The mean ages of the respondents were 52.62 with standard deviation of 12.3. About (53.1%) respondents age fall in the age group of 41-60 followed by those aged greater than 61years accounts about (25.5%). Dominant ethnic group were Oromo 214 (66.5 %) followed by Amhara 49 (15.2 %). Most of the respondents 284 (88.2%) were married. Regarding their religion 183(56.8%) were Muslim followed by orthodox.

Concerning educational status of respondents majority of them 251(78%) were educated followed by illiterate71(22%). Regarding their occupation 111(34.5%) were farmers followed by 72(22.4%) housewives. Majority 220 (68.3%) of the respondents had monthly income of greater than 200 birr. (Table 1)

Table 1: Socio demographic characteristic of the study participants among hypertensive patients following chronic illness clinic of JUSH, March to April 2014 (n= 322)

Variables		Frequency	Percent
Sex	Male	176	54.7
	Female	146	45.3
Age	18-40	69	21.4
	41-60	171	53.1
	>61	82	25.5
Ethnicity	Oromo	214	66.5
	Amhara	49	15.2
	Dawuro	9	2.8
	Yem	14	4.3
	Others(Kefa, Guraghe)*	36	11.2
Marital status	Married	284	88.2
	Single	10	3.1
	Divorced	7	2.2
	Widowed	21	6.5
Religion	Orthodox	120	37.3
	Muslim	183	56.8
	Protestant	15	4.7
	Others**	4	1.2
Occupation	Government employee	54	16.8
	Farmer	111	34.5
	daily laborer	8	2.5
	Merchant	43	13.4
	Housewife	72	22.4
	Others***	34	10.6
Educational level	Un educated	71	22.0
	Educated	251	78.0
Family income	<=200 ETB	102	31.7
	>200 ETB	220	68.3

*-Kefa, Guraghe   ** - Waqefata, Jova   ***-private organization, NGO's, Jobless

Clinical characteristics of study participants

As displayed in table 2 the mean ±standard deviation of duration of illness of the respondents were 5.09 and 5.9 with median of 3 respectively. Out of our study participants (105)32.6% of respondents had follow up for more than 5 years of duration which is followed by 58(18%) for 3-3.99 years of duration. Majority 216(67.1%) of respondents do have co morbidities. Among 322 study subjects 132(41%) have complication. Majority 270(83.9%) of them do not have drug side effects. (Table 2)

Table 2: Clinical variables of the respondents following chronic illness clinic of JUSH, March to April 2014 (n =322)

Variables		Frequency	Percent
Duration of illness in	.25-.99	14	4.3
years	1-1.99	56	17.4
	2-2.99	52	16.1
	3-3.99	58	18.0
	4-4.99	37	11.5
	>5	105	32.6
BMI category	<18	19	5.9
	18-24	228	70.8
	+25	75	23.3
Co morbidity	Yes	216	67.1
	No	106	32.9
Complication	Yes	132	41.0
	No	190	59.0
Drug side effects	Yes	52	16.1
	No	270	83.9

Description of health related quality of life among hypertensives

Domains of health related quality of life mean ± std. deviation was obtained as physical functioning (58.58 ±29.8), role physical (54.7±43.7), role emotional (57.45±44.82), vitality (57.01 ± 13.65), mental health (61.42 ±13.19), social functioning (74.61± 24.12), bodily pain(74.67 ± 25.46) and general health (51.66 ± 15.12) respectively. (Table 3)

Table 3: Description of Mean and standard deviation of Health-related Quality of Life among hypertensive patients following JUSH March-April, 2014.

Domains	Mean ± Std. Deviation
physical functioning	58.58±29.80
role physical	54.73±43.71
role emotional	57.45±44.82
Vitality	57.01±13.65
mental health	61.42±13.19
social functioning	74.61±24.12
bodily pain	74.67±25.46
general health	51.66±15.12

Sociodemographic variables and scale analysis

Results of mean HRQOL scale scores for Sociodemographic was listed using anova and independent sample T-test. Physical functioning (P< 0.05) and social functioning (P<0.001) domains showed statistically significant difference between male and female. As to marital status taking married as a reference significant association was seen using Post– hoc analysis according to tukey statistical test with widowed respondents on physical functioning (P < 0.001), role physical (P < 0.05), role emotional (P < 0.05) and social functioning (P < 0.001) (dependent variables).

Regarding their occupation, taking government employee as a reference post-hoc analysis revealed that farmers had brought significant mean difference on all domains except vitality and mental health at (P < 0.001). Concerning their educational status all domains of HRQOL were found to be significantly associated; i.e mean HRQOL scale scores within educational

status category had significant mean difference except for mental health domain which is not significant. (Table 4 and 5)

Table 4:- Mean and standard deviation using Independent sample T-test for HRQOL scale scores with Sociodemographic variables for hypertensive patients following JUSH, 2014.

Variables	Mean ± SD of domain scales							
	PF	RP	RE	VT	MH	SF	BP	GH
Sex								
male	62.07± 26.56	55.96± 43.91	57.95± 44.50	58.26± 13.63	61.38± 12.90	79.26± 20.34	76.22± 24.29	52.58± 14.71
female	54.38± 32.90	53.25± 43.57	56.84± 45.34	55.51± 13.57	61.47± 13.58	69.00± 27.03	72.80± 26.77	50.54± 15.58
P- value(t)	**.021***	.580	.826	.072	.950	**.000****	.232	.229
Educational status								
Un educated	39.29± 25.48	36.61± 41.58	40.37± 44.69	51.33± 9.40	58.76± 10.39	65.49± 25.13	64.22± 27.98	45.98± 12.67
educated	64.04± 28.69	59.86± 43.01	62.28± 43.74	58.62± 14.24	62.18± 13.81	77.19± 23.24	77.62± 23.95	53.26± 15.39
P- value(t)	**.000****	**.000****	**.001****	**.000****	.054	**.001****	**.000****	**.000****

NB. *P < 0.05,**P < 0.001

Table 5:-Mean and standard deviation using Anova test for HRQOL scale scores with Sociodemographic variables for hypertensive patients following JUSH, 2014.

Variables	Mean ± SD of domain scales							
	PF	RP	RE	VT	MH	SF	BP	GH
Marital status								
Married(+)	59.70±29.02	56.86±43.54	59.03±44.48	57.14±13.51	61.00±13.23	75.92±23.37	75.80±25.30	52.28±14.47
single	69.00±36.49	32.50±37.36	40.00±46.61	61.00±16.79	65.60±12.10	81.25±22.24	70.25±2.895	44.50±22.41
divorced	82.14±15.50	78.57±26.72	90.47±16.26	63.57±13.45	61.14±13.20	73.21±19.66	80.35±26.35	47.14±16.29
widowed	30.71±24.25**	28.57±42.04*	33.33±44.72	51.19±13.02	65.33±13.10	54.16±28.04**	59.52±21.90*	48.09±18.74
P- value	.000**	.005*	.008*	.097	.372	.001**	.034*	.211
Occupation								
government employee (+)	67.77±27.10	65.27±42.73	67.90±39.89	61.48±16.70	63.70±14.71	80.55±21.26	84.53±19.57	60.64±13.87
farmer	46.80±26.05**	37.83±43.54*	41.44±46.32*	55.58±12.27	60.46±10.93	66.32±25.49*	64.12±26.23**	46.66±12.60**
daily laborer	54.37±30.98	56.25±49.55	58.33±49.60	53.12±12.22	56.50±12.72	73.43±20.52	65.62±37.17	49.37±12.37
merchant	68.37±30.46	61.62±42.02	59.69±43.98	58.02±10.47	61.58±11.61	73.83±22.62	77.44±22.10	52.90±16.11
housewife	56.73±31.38	61.11±41.30	66.67±42.23	55.34±13.14	59.61±14.47	77.60±23.91	78.36±26.00	49.72±15.65
others	75.00±25.99	70.58±36.65	70.58±40.00	57.79±16.43	65.76±15.69	87.13±18.07	84.26±18.49	56.76±15.56
P-value	.000**	.000**	.000**	.106	.137	.000**	.000**	.000**

NB. *P < 0.05,**P < 0.001   + =reference

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Clinical information and scale analysis

Regarding clinical information statistically significant associations were seen for co morbidity on physical functioning (P < 0.001), role physical (P < 0.001), role emotional (P < 0.001), vitality (P < 0.001), mental health (P < 0.05), social functioning (P < 0.001), bodily pain (P < 0.001), and general health (P < 0.001). Drug side effect and complication were also brought significant mean difference on domain score at (P < 0.001) except for mental health which is not significant. (Table 6)

Table 6:-Mean and standard deviation using Independent sample T-test for HRQOL scale scores with clinical variables for hypertensive patients following JUSH, 2014.

Variables	Mean ± SD of domain scales							
	PF	RP	RE	VT	MH	SF	BP	GH
Co morbidity								
No	71.17± 25.51	76.17± 35.41	76.73± 36.85	62.83± 14.47	63.62± 14.09	82.90± 21.15	82.73± 23.86	57.02± 14.32
Yes	52.40± 29.86	44.21± 43.61	47.99± 45.42	54.16± 12.30	60.35± 12.62	70.54± 24.49	70.71± 25.34	49.02± 14.83
P-value	.000**	.000**	.000**	.000**	.036*	.000**	.000**	.000**
Drug side effect								
No	69.60±25.67	72.23±36.40	76.14±36.17	59.52± 13.86	62.16±13.18	82.63±19.56	83.06±22.01	56.21±14.49
Yes	42.72± 28.23	29.54± 41.07	30.55± 42.41	53.40±12.54	60.36± 13.19	63.06± 25.41	62.59± 25.31	45.11± 13.57
P value	.000**	.000**	.000**	.000**	.228	.000**	.000**	.000**
Complication								
No	69.60± 25.67	72.23± 36.40	76.14± 36.17	59.52± 13.86	62.16± 13.18	82.63± 19.56	83.06± 22.01	56.21± 14.49
Yes	42.72± 28.23	29.54± 41.07	30.55± 42.41	53.40± 12.54	60.36± 13.19	63.06± 25.41	62.59± 25.31	45.11± 13.57
P-value	.000**	.000**	.000**	.000**	.228	.000**	.000**	.000**

 NB. *P < 0.05,**P < 0.001

Health Related Quality of Life and Control of blood pressure

The domains of health related quality of life of hypertensive's that had controlled blood pressure and those with uncontrolled blood pressure were compared. According to the findings all domains of quality of life for controlled hypertensive's were a little higher than those patients for uncontrolled BP. Physical functioning, role physical and emotional domains showed statistically significant difference between patients with controlled and uncontrolled BP. (Table 7)

Table 7: Comparison of Mean HRQOL score using independent sample T-test for Respondents with Controlled and Uncontrolled Blood Pressure following JUSH, 2014.

	Mean ± SD		P-value
Domains	Patients with Controlled BP	Patients with Uncontrolled BP	
physical functioning	60.85 ± 29.93	53.15 ±28.94	.034*
role physical	59.58 ± 42.90	43.15 ±43.67	.002*
role emotional	62.70 ±43.43	44.91 ±45.80	.001*
vitality	57.48 ±13.65	55.89 ± 13.68	.340
mental health	61.12 ±13.08	62.14 ±13.49	.528
social functioning	75.49 ± 24.42	72.50 ± 23.39	.310
bodily pain	75.58 ±2.579	72.50 ± 24.66	.322
general health	52.37 ±15.00	49.94 ± 15.34	.189

NB. *P < 0.05

Factors associated with Health Related Quality of Life among Hypertensive patients

Factors associated with HRQOL using Simple linear regression (SLR)

SLR was utilized taking each variables one at a time to analyze the Sociodemographic variables like age, gender, marital status, occupation, educational status, income, clinical variables like co morbidity, complication and drug side effect, hypertension self care practice and institutional care with physical and mental component summary score as listed in (table 8). Those variables significant during SLR were candidate for MLR.

Table 8: Simple Linear Regression (SLR) Model showing associated factors for Physical and Mental Component Summary Score among Hypertensive patients attending JUSH, March - April 2014

Variables	PCS score		MCS score	
	Unstandardized Coefficients	Sig.	Unstandardized Coefficients	Sig.
Female	-.18	.107	-.25	**.026**
Male (reference)				
Age	-.01	**.008**	-.01	**.028**
Single	-.29	.344	.12	.692
Divorced	.36	.338	.39	.293
Widowed	-.79	**.000**	-.64	**.004**
Married (reference)				
Income	.00	**.000**	.00	**.000**
Farmer	-.93	**.000**	-.67	**.000**
Housewife	-.42	**.012**	-.31	.078
Others	-.17	.291	-.18	.271
Government (reference)				
Un Educated	-.73	**.000**	-.64	**.000**
Educated (reference)				
have co morbidity	-.73	**.000**	-.74	**.000**
No co morbidity(reference)				
Presnce of drug side effect	-1.06	**.000**	-.89	**.000**
Absence of drug S/E (reference)				
complication present	-1.06	**.000**	-.89	**.000**
Absence of complication (reference)				
Hypertension self-care practice	.516	**.000**	.515	**.000**
patient satisfaction scale score	.079	.155	-.03	.517

NB. Bold letter indicates candidate variables for MLR

Factors associated with HRQOL using Multiple Linear Regression

MLR was used aiming at identifying associated factors of health related quality of life. Most factors of HRQOL like age, gender, marital status, level of education ,occupation, income, co morbidity, duration of illness, drug side effect, self care practice and patient satisfaction as covariates were considered in a multiple linear regression model as independent variables applying stepwise selection method for PCS and MCS summary scores.

The Multiple Linear Regression for Physical Component Summary score

MLR for PCS score showed that those patients who encountered drug side effects had significantly lower PCS score with (b= -.66), [95% CI -.83 to -.48] at P<0.0001. Hypertension self care practice was significantly associated with higher PCS score with (b=.35), [95% CI .27 to .43] at P<0.0001. Regarding occupation of respondents farmers had significantly lower PCS score as compared to those who were government employee (b= -.60), [95% CI -.78 to -.43] at P <0.001. Respondents with co morbidity had lower PCS score   with (b= -.29), [95% CI -.47 to -.11] at P <0.05. Concerning gender of the respondents female respondents had lower PCS score with (b= -.25), [95% CI -.41 to -.08] at P <0.05. (Table 9)

Table 9: Multiple Linear Regression Model showing associated factors with Physical Component Summary Scale among Hypertensive patients attending JUSH, March- April 2014

PCS score	Unstandardized Coefficients	Beta	Sig.	95% CI for B	
				Lower Bound	Upper Bound
(Constant)	.79		.000	.62	.96
Drug side effect absence of drug S/E*	-.66	-.32	.000**	-.83	-.48
Hypertension self-care practice	.35	.35	.000**	.27	.43
Farmer Government employee*	-.60	-.28	.000**	-.78	-.43
Presence of co morbidity Absence of co morbidity*	-.29	-.13	.002***	-.47	-.11
Female Male*	-.25	-.12	.003***	-.41	-.08

NB. *= reference variable, ** = significant at < 0.001,   ***= significant at <0.05, Adjusted R^2=50.4%, Maximum VIF=1.27

The Multiple Linear Regression for Mental Component Summary

MLR for MCS score showed that hypertension self care practice was significantly associated with higher MCS score with (b= .38), [95% CI .30 to .47] at P<0.0001. Those respondents who have complication had significantly lower MCS score (b= -.47), [95% CI -.66 to -.28] at P<0.0001. Respondents with co morbidity had lower MCS score at (b= -.36), [95% CI -.56 to -.17] at P <0.001. Concerning occupational status farmers had significantly lower MCS score as compared to government employee with (b= -.39), [95% CI -.58 to -.20] at P <0.001. Regarding gender of respondents similar results were obtained as to PCS score that was female respondents had lower MCS score with (b= -.25), [95% CI -.43 to -.07] at P <0.05. (Table 10)

Table 10: Multiple Linear Regression Model showing associated factors for Mental Component Summary Scale among Hypertensive patients attending JUSH, March- April 2014

MCS score	Unstandardized Coefficients	Beta	Sig.	95% CI for B	
				Lower Bound	**Upper Bound**
(Constant)	.69		.000	.51	.87
hypertension self-care practice	.38	.38	.000**	.30	.47
complication present absence of complication*	-.47	-.23	.000**	-.67	-.28
Presence of co morbidity Absence of co morbidity*	-.36	-.17	.000**	-.56	-.17
Farmer Government employee*	-.39	-.18	.000**	-.58	-.20
Female Male*	-.25	-.13	.005***	-.43	-.07

NB. *= reference variable, ** = significant at < 0.001, ***= significant at <0.05 Adjusted R^2=41.6%, Maximum VIF=1.27

Multiple Linear Regression model for total quality of life

This model revealed that factors which were significantly associated with both summary scores was obtained in this model. In TQOL model those respondents with higher Hypertension self care practice score had significantly higher TQOL score with (b=.37), [95% CI .29 to .46] at P<0.0001. Those respondents who have complication and co morbidity had significantly lower TQOL score with (b= -.64), [95% CI -.82 to -.47] and [b=-.31, 95% CI -.49 to -.14] respectively. Farmers had significantly lower TQOL score (b= -.55), [95% CI -.72 to -.38] at P <0.001as compared to government employee. Being female was negatively associated with lower score of TQOL with (b=-.27) [95% CI -.43 to -.10] at P <0.05. (Table 11)

Table 11: Multiple Linear Regression Model showing associated factors for Total quality of life score among Hypertensive patients attending JUSH, March- April 2014

TQOL score	Unstandardized Coefficients	Beta	Sig.	95% CI for B	
				Lower Bound	Upper Bound
(Constant)	.79		.000	.62	.96
hypertension self-care practice	.38	.37	.000**	.29	.46
Presence of complication absence of complication*	-.64	-.31	.000**	-.82	-.47
Farmer Government employee*	-.56	-.26	.000**	-.73	-.38
Presence of co morbidity Absence of co morbidity*	-.31	-.15	.001***	-.49	-.14
Female male*	-.27	-.13	.001***	-.43	-.10

NB. *= reference variable, ** = significant at < 0.001, ***= significant at <0.05 Adjusted R^2=51.7%, Maximum VIF=1.27

CHAPTER SIX

DISCUSSION

The current study was undertaken to highlight the profile and associated factors of HRQOL in a hypertensive population. There have been few quantitative assessments of HRQOL of Hypertensive patients in Africa including Ethiopia. This study has tried to address this issue. It has analyzed health related quality of life of Hypertensive patients as judged by different socio demographic, clinical, patient and service related factors in addition to the comparison with other studies.

The profile of eight HRQOL domain mean score of the study population in this study showed that physical functioning, role physical, general health, role emotional, vitality and mental health were a little above average while social functioning and bodily pain were far above average and this is comparable with studies done in Nigeria (25) but lower than that of the study conducted in Sweden (16) possible explanation for the discrepancy may be study in Sweden was a population based study where as this study is a hospital based study and it might be differences in development and economic strength of the study populations but this study did not explore this fact.

The QOL of hypertensive's who had controlled blood pressure and those with uncontrolled blood pressure was compared. According to this findings Physical functioning, role physical and emotional domains showed statistically significant difference between patients with controlled and uncontrolled BP and this is consistent with a study conducted in Nigeria (25) and inconsistent with study conducted in Brazil (26), possible explanation for this might be knowledge of control measure for high blood pressure and life style modification change.

Comparison of mean within group using t-test and anova was analyzed which revealed that statistically significant difference were seen between male and female which indicates males enjoy better quality of life related to female. Married respondent had higher QOL domain mean score compare to widowed, this might due to married respondents do have close care and support from their husbands.

Being farmer and un educated was brought statically significant mean difference compared to government employee and educated, this might due to strong correlation between farmers and educational status i.e. according to this finding most farmers were uneducated, but the higher the level of education influences the ability to understand information, which favors knowledge on the disease and treatment adherence that improve quality of life.

This study showed that output of T-test showed that presence of co morbidity, complication and drug side effect brought significant difference on eight domain mean score of HRQOL.

Results from multiple linear regression analysis showed that drug side effect, self care practice, gender, occupational status, marital status, complication and co morbidity were significantly associated with physical, mental component summary score and total quality of life score in hypertensive's.

Patients that encountered drug side effects had significantly lower PCS score compared to those who had not encountered and this finding is consistent with a study conducted in Netherland (34), Poland (11), Egypt (33), reported that the unfavorable consequences of hypertensive drug side-effects on quality of life and this finding along with other study suggests that health professional have to give emphasis on drug side effect to improve quality of life of hypertensive population.

Hypertensive's' patients who had better self care practice was significantly associated with higher PCS, MCS and TQOL score and this finding is compatible with a study done in Palestine (29), showed that adherent patients to diet, physical exercise, low level of stress are important factors for enhanced QOL. Therefore, hypertensive patients adherent to life style modification had better control of their blood pressure, absence of complication and co morbidity that results in improved quality of life.

Regarding gender of respondents this finding showed that female respondents had lower PCS, MCS and TQOL score and this finding is compatible with study conducted Palestinian (20), Netherland (34), Sweden (16) which reported that women generally report worse health and HRQL than do men. This might be due to the fact that males have the opportunity to go out visiting friends, the vast majority of males work and earn money, even if they are not working they are keeping the money which represents to them a source of power and satisfaction,

spending too much time outside the house which is in most times is the source of tension and anxiety, which will improve their quality of life.

The finding if this study showed respondents in the presence of co morbidity had lower PCS, MCS and TQOL score and this finding is consistent with other studies done in Nigeria (25), Malasia (30), Poland (35), concluded that SF-36 scores in the presence of co morbidity were limited and had statistically significant lower HRQOL than patients without co morbidities.

According to this finding patients who develop complication had significantly lower MCS and TQOL score and this is consistent with study done in Brazil (31). These findings suggest that prevention, early diagnosis, and effective treatment of chronic diseases reduce occurrence of co morbidity and complication that helps to preserve the HRQOL in patients with hypertension.

This study also showed that being farmers had significantly lower PCS, MCS and TQOL score as compared to those who were government employee related to study done in Pakistan (27) reported that QOL of respondents with private jobs had significant relation with those who were jobless and government officials. Other study conducted in Palestine (28) concluded that specific socio- demographic and disease-related characteristics of hypertensive patients as well as treatment factors were strongly associated with HRQOL.

In general mean score of health-related quality of life domains among hypertension were a little above average. The finding of this study suggests that the importance of considering associated factors of HRQOL for improvement of quality of life of hypertensive population.

The limitation of this study was lack of studies conducted in developing countries that help as for comparison with current study. The study utilized quantitative methods and not qualitative methods. Another limitation was Health-related quality of life data is to a large extent subjective. A number of factors are likely to influence the participant reported data given the prevailing circumstances. For instance, the loss of a loved one can cause depression and this would impact on HRQOL of an individual. Cause and effect relationship cannot be tested since its cross-sectional study

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATION

7.1 CONCLUSION

In summary, results from this study revealed that profile of eight domains of health related quality of life mean score were a little above average.

The results of the present study provide an evidence for a model that correlates with patients' socio-demographic information, clinical characteristics, self-care practice and HRQoL.

According to this finding mental, physical component and total HRQOL were associated with Sociodemographic factors like gender, occupation, marital status, clinical factors like co morbidity, complication and drug side effects and high blood pressure self-care practice.

Patients encountered drug side effect, farmer, female, and presence of co morbidity were associated with lower Physical component summary score while better hypertension self care practice were associated with higher Physical component summary score of HRQOL.

Respondents with presence of complication and co morbidity, being female and farmer were associated with lower mental component summary score while better hypertension self care practice were associated with higher mental component summary score.

Finally in total quality of life model female, farmer, complication and co morbidity were associated with lower score of TQOL while better hypertension self care practice were associated with higher score of total quality of life.

7.2 RECOMMENDATION

This study confirmed the multiple complexities of the important factors that influence HRQOL. Incorporating the associated variables to develop multifaceted interventions may reduce negative impacts on HRQOL and health outcomes in Hypertension.

Based on this finding

1. Health care providers are encouraged to measure HRQOL among hypertensive patients who have follow up in chronic illness clinic. This would facilitate to provide holistic care and improve the quality of services provided by physicians.

2. Health care providers are to encourage people to introduce life style modifications in terms of physical activity, diet, recreation.

3.   As chronic illness is rising from time to time due to different factors this study recommends that the Ministry of Health adopts measuring of HRQOL among hypertensive patients as one component of health goals.

4. Further research is also recommended in order to identify appropriate and targeted interventions in an effort to improve HRQOL in patients with hypertension specially on life style and its effect on the quality of life.

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Annex

Annex 1: Document review checklist

Respondent's identification number _____

Please review patient chart and record the data as follows for those options listed please circle the options and if it is not listed put the information on the space provided.

1. Type of hypertension _____.
2. B/P measurement in 3 appointments

    A. ____/_____
    B. ____/_____
    C. ____/_____

3. Weight _____ k.g
4. Height _____ m.
5. Evidence of co morbidities noted

    A. DM
    B. Heart failure
    C. Renal failure
    D. Neurological disorder
    E. Other (specify) _____.

Annex II: Questionnaire and Measurements

Jimma University

College of Public Health and Medical Sciences

Department of nursing

Questionnaires for Health related quality of life and associated factors among hypertension patients attending follow up at JUSH.

Consent form:

Hello: My name is -------------- and I 'm from Jimma University. We are conducting a study on Assessment of Health related quality of life and associated factors among hypertension patients attending follow up at JUSH. As part of this you are kindly requested to be included in the study which has great importance to improve the medical care which patients receive for hypertension and ultimately their quality of life. The interview will take a maximum of 25 minutes. It will not cause you any physiological, financial or psychological harm nor affect the health care service you are getting.   Your participation will be based on your willingness and you have the right not to participate fully or partially. If you agree to be included in the study, I will start my question by asking general identification questions.

May I continue?   1) Yes -------------

                             2) No--------------

Name of the interviewer ----------------------- Date ------------ Signature -------------

Name of the supervisor ------------------------ Date ------------- Signature ------------

PART I:- SOCIO - DEMOGRAPHY DATA

Please ask the respondents the following questions and record the responses for closed ended questions. Please circle the responses of the respondents and put the responses of the respondents for open ended and for semi- closed questions (if the response is not listed) on the space provided.

1. Your age, please? --------------------Years
2. Sex
   A. Male
   B. Female
3. What is your Ethnic group?
   1. Oromo 2. Amhara   3) Dawuro   4) Yem   5) Others (specify)_____
4. What is your Religion?
   1. Muslim
   2. Orthodox
   3. Protestant
   4. Catholic
   5. Other(specify)_____
5. What is your marital status?
   1. Married
   2. Single
   3. Divorced
   4. windowed
   5. other(specify)_____
6. What is your Occupation?
   1. Gov't employee
   2. Merchant
   3. Farmer
   4. House wife
   5. Daily laborer
   6. Other (specify)_____

7. Educational level   A. Illiterate B. read and write C. Elementary D. high school E. higher education

8. Annual average family income (cash and kind) in Birr per month _____Birr.

9. Who covered the cost of the drug?

   i. My self

   ii. Family

   iii. Free

   iv. Employer organization

   v. Other (specify)_____

PART II. CLINICAL CHARACTERISTICS

1 When did you first start your hypertension treatment? _____ Years.

2 What health complaints other than high blood pressure do you have currently? (More than one answer can be selected)

   1. None

   2. Heart problems

   3. Paralysis of a limb

   4. Swelling of the feet or leg

   5. Visual impairment

   6. Kidney problems

   7. Shortness of breath

   8. Irregular heartbeats (palpitations)

   9. Other specify _____

3 Did you encounter any hypertension related complication in the past?

   i. Yes

   ii. No

4 How many pills are you taking for your high blood pressure daily? _____.

5 How often do you take your medications?_____ times/day.

6 Did you encounter any side effects of treatment? a) yes   b) no

PART III.COMPLIANCE TO THE LIFESTYLE MODIFICATION REGIMEN

S.NO	How often do you	Daily 4	Frequently 3	Rarely 2	Never 1
1	smoke?				
2	drink alcohol?				
3	eat a meal high in animal fat?				
4	eat vegetables?				
5	eat fruits?				
6	eat fast food?				
7	sprinkle salt on your food?				
8	engage in physical exercise?				
9	try to lose some weight?				
10	relax?				
11	get enough sleep?				

PART IV.   Patient satisfaction towards chronic illness clinic services

Please tick (√) the level of your satisfaction against the following statement in the relevant box.

Scale: 5 = Strongly agree, 4= Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly disagree

S.NO	satisfaction to the medical service	Satisfaction level				
		5	4	3	2	1
Physical facility						
1.	Building of this hospital is clean					
2.	Ventilation inside the hospital is good					
3.	Enough light inside the building of hospital					
4.	No noise around the hospital					
5.	Waiting room has enough sitting chairs					
6.	Enough clean toilets are available					
7.	Enough physical examination rooms are available					
Medical equipment						
8.	Enough medical equipment for examination is available					
9.	Medical equipment is in good working order					

	Doctor service					
10.	Hospital doctors do physical examination with respect					
11.	Doctors spend enough time with patient in examination					
	Nurse's service					
12.	Hospital nurses treat the patient with respect					
13.	Nurses explain the treatment clearly					
	Pharmacy service					
14.	Hospital pharmacist treat patients with respect					
15.	Pharmacists explain the use of medicine clearly					
	Registration service					
16.	Registration staff treats the patient with respect					
17.	Registration staff has good communication					
	Laboratory service					
18.	laboratory test are affordable					
19.	Expenses for pathology laboratory test are affordable					

PART V. SF-36 QUESTIONNAIRE ITEMS

1. In general, what do you say your health is?   **(Circle One Number)**

    Excellent 1

    Very good.. 2

    Good.. 3

    Fair 4

    Poor.. 5

2. **Compared to one year ago**, how would you rate your health in general **now**? **(Circle One Number)**

    Much better now than one year ago 1

    Somewhat better now than one year ago 2

    About the same 3

    Somewhat worse now than one year ago.......................... 4

    Much worse now than one year ago 5

3. The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much? **(Circle One Number on Each Line)**

		Yes, Limited a Lot	Yes, Limited a Little	No, Not Limited at All
a.	**Vigorous activities,** such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b.	**Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c.	Lifting or carrying groceries	1	2	3
d.	Climbing **several** flights of stairs	1	2	3
e.	Climbing **one** flight of stairs	1	2	3

f.	Bending, kneeling, or stooping	1	2	3
g.	Walking **more than a mile**..	1	2	3
h.	Walking **several blocks**...	1	2	3
i.	Walking **one block**	1	2	3
j.	Bathing or dressing yourself	1	2	3

4. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**? (**Circle One Number on Each Line**)

		Yes	No
a.	Cut down the **amount of time** you spent on work or other activities..	1	2
b.	**Accomplished less** than you would like.......................	1	2
c.	Were limited in the **kind** of work or other activities	1	2
d.	Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

5. During the **past 4 weeks,** have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)? (**Circle One Number on Each Line**)

		Yes	No
a.	Cut down the **amount of time** you spent on work or other activities	1	2
b.	**Accomplished less** than you would like.......................	1	2
c.	Didn't do work or other activities as **carefully** as usual...	1	2

6. During the **past 4 weeks,** to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? (**Circle One Number**)

Not at all.. 1

Slightly 2

Moderately 3

Quite a bit...................................... 4

Extremely..................................... 5

7.   How much **bodily** pain have you had during the **past 4 weeks**? **(Circle One Number)**

None... 1

Very mild 2

Mild... 3

Moderate 4

Severe.. 5

Very severe 6

8. During the **past 4 weeks,** how much did **pain** interfere with your normal work (including both work outside the home and housework)? **(Circle One Number)**

Not at all....................................... 1

A little bit 2

Moderately 3

Quite a bit..................................... 4

Extremely..................................... 5

9. These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks** . **(Circle One Number on Each Line)**

		All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
a.	Did you feel full of pep?	1	2	3	4	5	6
b.	Have you been a very nervous person?.	1	2	3	4	5	6
d.	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6

e.	Have you felt calm and peaceful?.........	1	2	3	4	5	6
f.	Did you have a lot of energy?	1	2	3	4	5	6
g.	Have you felt downhearted and blue?...	1	2	3	4	5	6
h.	Did you feel worn out?	1	2	3	4	5	6
i.	Have you been a happy person?............	1	2	3	4	5	6
j.	Did you feel tired?	1	2	3	4	5	6

10. During the **past 4 weeks,** how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

(Circle One Number)

All of the time 1

Most of the time............................. 2

Some of the time 3

A little of the time.......................... 4

None of the time............................. 5

11. How TRUE or FALSE is each of the following statements for you. **(Circle One Number on Each Line)**

		Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
a.	I seem to get sick a little easier than other people..	1	2	3	4	5
b.	I am as healthy as anybody I know.............	1	2	3	4	5
c.	I expect my health to get worse.	1	2	3	4	5
d.	My health is excellent.	1	2	3	4	5

Thank you very much for your valuable time.

50

በጅማ ዩኒቨርሲቲ የህብረተሰብ ጤናና ህክምና ሳይንስ ኮሌጅ

የነርስ ትምህርት ክፍል

በጅማ ዩኒቨርሲቲ አጠቃላይ ሪፈራል ሆስፒታል በደም ግፊት ህክምና ክፍል የደምግፊት ህሙማን ኘህክምናዉ ጋር ስላላቸዉ ቁርኝት መጠየቂያ ቅጽ፤

ህሙማን በጥናቱ ለመሳተፍ ፈቃደኛ ሥለመሆናቸው የሚገልጹበት ፎርም

ጤና ይስጥልኝ ? የእኔ ስም------------------------ ይባላል ከ ጅማ ዩኒቨርሲቲ ነዉ፡፡ የደምግፊት ህሙማን ህክምናዉ ጋር ስላላቸዉ ቁርኝት ጥናት በማድረግ ላይ የምንገኝ ሲሆን እርስዎም በዚሁ ጥናት እንዲሳተፉ ስንጠይቅ በታላቅ አክብሮት ነዉ፡፡ በማድረግበሚደርገው በዚህ ጥናት ተሳታፊ ስሆን ክርስፕ በዚህ የደምግፊት ክትትል ክፍል ክትትል ሲያደርጉ ከህክምናው ደንብ ጋር አብሮ ስለመሄድዎ ቃለመጠይቅ አደርግሎታለሁ፡፡

ይሄ ጥናት ለ ደም ግፊት ህሙማን የሚሰጠዉን ህክምና ለ ማሻሻል ከፍተኛ እገዛ የሚያደርግ ይሆናል፡፡በተጨማሪም ህሙማኑ ህክምናዉን በተሟላ እና በበቂ ሁኔታ ተከታትለዉ እንዲጫርሱና የደምግፈታቸውን እንዲቆጣጠሩ ለማስቻል ያግዛል፡፡

ለቃለ መጠይቁ እንዲሳተፉ ስንጠይቅ፤ቃለመጠይቁ የሚፈጀዉ ቢበዛ 20 ደቂቃ ሲሆን፣ የእርስዎ ስምም ሆነ አድራሻ በመጠይቁ ውስጥ አይካተትም፡፡ እንዲሁም የዐርስዎ ማንነትም ሆነ የሠጡት ምላሽ የዐርስዎ ሥለመሆኑ በምንም ሁኔታ አይገለጽም፡፡ በዚህ ጥናት ለማሳተፍ እኛ የእርስዎን ሙሉ ፍቃደኝነት ስንጠይቅ ያለምንም አስገዳጅነት ሲሆን ፈቃደኛ ካልሆኑ ከመጀመሪያውም ሆነ ቃለ መጠይቁን ከጀመሩ በኋላ በመሃል ማቋረጥ ይችላሉ፡፡

በጥናቱ ለመሳተፍ ፈቃደኛነዎት? **አዎ**   ፤ ቃለ መጠይቁን ይጀምሩ

                    አይደለሁም፤ አመስግነዉ ያቁሙ፡፡

የ ጠያቂዉ ስም---------------------------------- ፈርማ ----------------

የ ተቆጣጣሪው ስም ------------------------------ ፈርማ   ----------------

ክፍል አንድ፡- ስለ እርስዎ መጠይቅ

ከዚህ በታች የተዘረዘሩ፣" ጥያቄዎች ተሣታፊዎችን በመጠየቅ መልሱን ከተዘረዘሩት ውስጥ ያክብቡ ወይም በክፍት ቦታው ላይ ይሙሉት።

ተ.ቁ	ጥያቄዎች	መልሶች
1	እድሜ	ዓመት
2	ፆታ	1. ወንድ 2. ሴት
3	ብሔር	1. ኦሮሞ 2. አማራ 3. ዳውሮ 4. የም 5. ሌላ (ይጠቀስ)------------------
4	ሀይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ (ይጠቀስ)------------------
5	የጋብቻ ሁኔታ	1. ያገባ/ች 2. ያላገባ/ች 3. የፈታ/ች 4. የሞተበት/ባት 5. ሌላ ካለ ይጠቀስ ---------------
6	የስራ ሁኔታ	1. የመንግስት ሠራተኛ 2. አርሶዓደር 3. የቀን ሰራተኛ 4. ነጋዴ 5. የቤት እመቤት 6. ሌላ ካለ ይጠቀስ ---------------
7	የትምህርት ደረጃ	-------------------------
8	አማካይ አመታዊ ገቢ (በጥሬ ወይም በዕቃ)	------------------------ ብር
9	የመድሐኒት ወጪዎን ማነው የሚከፍለው?	1. እኔ 2. ቤተሰብ 3. በነፃ 4. የቀጠሮት መስፆያ ቤት 5. ሌላ ካለ ይግለፁ ---------------

ክፍል ሁለት ፡- ክሊኒካል ጉዳዮች

ተ.ቁ	ጥያቄዎች	መልሶች

1	መቼ ነው የደም ግፊት ህክምና የጀመሩት	---------------- ዓመት በፊት
2	አሁን ከደም ግፊት ሌላ ምን የጤና ችግር አለቦት?	1. ምንም የለብኝም 2. የልብ ችግር 3. የእግር ወይም እጅ አለመንቀሳቀስ 4. የእግር ወይም እጅ እብጠት 5. የአይታ ችግር 6. ኩላሊት ችግር 7. የትንፋሽ ማጠር 8. ትክክል ያልሆነ የልብ ምት 9. ሌላ --------------------
3	ከደም ግፊት ጋር የተያያዘ ችግር አጋጥሞት ያውቃል?	1. አዎ 2. አያውቅም
4	ለደም ግፊትዎ በአንድ ቀን ምን ያህል ኪኒን ይወስዳሉ?	--------------------
5	በቀን ሥንት ጊዜ መድሃኒት ይወስዳሉ	--------------------
6	ባለፉት ሶስት ቀናት ምን ያህል ጊዜ መድሃኒት ሳይወስዱ ቀሩ?	--------------------
7	ለጥያቄ ቁጥር 6 መልሱ አንዴና ከዚያ በላይ ከሆነ፣ ምክንያቱ ምንድነው?	1. ደህና የመሆን ስሜት ስለተሰማኝ 2. መድሃኒት መውሰድ እረስቼ 3. ሌላ ካለ ይግለፁ -----------------

ክፍል 3. የጤናማ ሕይወት መርህ አተገባበር

ተ.ቁ	ለምን ያህል ጊዜ . . .	በየቀን 4	አልፎአልፎ 3	በትንሹ 2	በጭራሽ 1
1	ያጨሳሉ?				
2	አልኮል ይጠጣሉ?				
3	ጫጫማ /ስብ የበዛበት ምግብ ይመገባሉ?				
4	ቅጠላ ቅጠል ይመገባሉ?				
5	ፍርፍሬ ይመገባሉ?				
6	ቶሎ የሚዘጋጁ ምግቦችን ይመገባሉ? ለምሳሌ እንቁላል ሳንድዊች በርገር				
7	ጨው በምግብዎ ላይ ይጨምራሉ?				
8	የአካል ብቃት እንቅስቃሴ ይሰራሉ?				
9	የሰውነት ክብደት ለመቀነስ ይጥራሉ?				
10	ይዝናናሉ?				
11	በቂ እንቅልፍ ይተኛሉ?				

ክፍል 4. የረጅም ጊዜ ህሙማን የክሊኒክ አገልግሎት ደስተኛነት/እርካታ

ትዕዛዝ ለጠያቂዉ:- በሚሰጡት መልስ መሰረት በጣም እስማማለሁ (5)፤ እስማማለሁ (4)፤ ገለልተኛ(3)፤ አልስማማም(2)፤ በጣም አልስማማም (1) የሚሉትን መልሶች በተሰጠዉ ረድፈ ላይ (√) ምልክት ያድርጉ።

ተ.ቁ	የህክምና አገለግሎት እርካታ	እርካታ ደረጃ				
		5	4	3	2	1
ተቋማዊ ቁሳቁሶች						
1.	በአጠቃላይ ሆስፒታሉ ንፁህ ነዉ.					
2.	በሆስፒታሉ ህንፃ ዉስጥ ንፁህ አየር አለ					
3.	በሆስፒታሉ ህንፃ ዉስጥ በቂ መብራት አለ					
4.	በሆስፒታሉ አካባቢ የሚረብሽ ድምፅ የለም					
5.	በመቀበያ ክፍሉ በቂ የመቀመጫ ወንበሮች አሉ					
6.	በቂና ንፁህ መፀዳጃ ቤት አለ					
7.	በቂ የህክረምና መመርመሪያ ክፍሎች አሉ					
የህክምና መሳሪያዎች/ቁሳቁሶች						
8.	ለምርመራ የሚዉሉ በቂ የህክምና መመርመሪያ መሳሪያዎች/ቁሳቁሶች አሉ					

9.	ለምርመራ የሚዉሉ መመርመሪያ መሳሪያዎች/ቁሳቁሶች በስርአት ተዘጋጅተዋል					
የሀኪሞች አገልግሎት						
10.	የሆስፒታል ሀኪሞች ለህሙማንን የአካል ምረመራ በክብር ያደርጋሉ					
11.	የሆስፒታል ሀኪሞች ለህሙማንን ምረመራ በቂ ጊዜ ይሰጣሉ					
የነርሶች አገለግሎት						
12.	የሆስፒታል ነርሶች ህማንን በክብር ያግዛሉ					
13.	የሆስፒታል ነርሶች የህማንን ህክምና በግልፅ ያስረዳሉ					
የፋርማሴ አገለግሎት						
14.	የሆስፒታል ነርሶች ህማንን በክብር ያግዛሉ					
15.	የፋርማሴ ባለሙያዎች የመዳኒት አጠቃቀምን በአግባቡ ያስረዳሉ					
የመገዝብ ቤት አገለግሎት						
16.	የመገዝብ ቤት ሰራተኞች ህማንን በክብር ያስተናግዳሉ					
17.	የመገዝብ ቤት ሰራተኞች ከኅሙማን ጋር የሚያደርጉት መግባባት ጥሩ ነዉ.					
የምርመራ አገለግሎት						
18.	የምርመራ ቁሳቁሶች እንደተፈለገዉ ታገኛቸዉ					
19.	ለምርመራ ቁሳቁሶች የሚያወጡት ወጪ አግባባነት ያለዉ ነዉ.					

ክፍል 5፡ጠቅላላ የጤና እሳቤ እና የህክምና ዉጤት ሁኔታ ዝርዝሮች(ኤስ ኤፍ 36)

የሚከተሉት ጥያቄዎች ጠቅላላ የጤና እሳቤን እና የህክምና ዉጤትን ሁኔታ የሚጠይቁ ናቸዉ. ስለሆነም ለእያንዳንዱ ጥያቄ ምርጫዎችን ይሕበቡ፡፡

ተ.ቁ	ጥያቄዎች	ምርጫዎች
1	በአጠቃላይ ስለ ጤና ሁኔታህ ምን ትላለህ?	1. እጅግ በጣም ጥሩ 2. በጣም ጥሩ 3. ጥሩ 4. መጠነኛ 5. ዝቅተኛ
2	በአጠቃላይ ከአንድ አመት በፌት የነበረዉን የጤና ሁኔታ ከአሁኑ ጋር ስታነፃፅረዉ ምን ይመስላል?	1. ከባለፈዉ አመት የተሸለ ነዉ. 2. በመጠኑ ከባለፈዉ አመት የተሸለ ነዉ. 3. ከባለፈዉ አመት ጋር ተመሳሳይ ነዉ. 4. ከባለፈዉ አመት የባስ ነዉ.

የሚከተሉት ጥያቄዎች የአንተን የእለት ተእለት እንቅስቃሴን የሚጠይቁ ናቸዉ፡፡ የጤናህ ሁኔታ እነዚህን የአንተን የእለት ተእለት እንቅስቃሴህን የሚገድቡ ናቸዉ? ከሆነ በምንያሀል መጠን?

ጥያቄዎች	ምርጫ		
	አምን በጣሙት ገድቦዉ...	በመጠኑ ገድቦ...	አልገደበ...

3	ከባድ እንቅስቃሴዎችን ለምሳሌ ሩጫ፤ከባድ እቃዎችን ማንሳት፤ጠንካራ ስፖርቶች ላይ መሳተፍ፡፡	1	2	3
4	መካከልኛ እንቅስቃሴዎችን ለምሳሌ ጠረጴዛን ማንቀሳቀስ፤ ካስ ማንጠር ጨዋታ	1	2	3
5	እቃዎችን ማነሳት ወይንም መሸከም	1	2	3
6	ወደ ላይ ብዙ ደርጃችን መዉጣት	1	2	3
7	ወደ ላይ አንድ ደርጃችን መዉጣት	1	2	3
8	መተጣጠፍ፤በጉልበት ማሪፍ፤ በጀርባ ተኝቶ ትክሻና እራስን ማቃናት	1	2	3
9	ከአንድ ማይል በላይ መጋዝ	1	2	3
10	ብዙ ህንፃዎችን መዉጣት	1	2	3
11	አንድ ህንፃዎ መዉጣት	1	2	3
12	በራስህ መታጠብና መልበስ	1	2	3
	ባለፉት አራት ሳምንታት ዉስጥ በአካላዊ ጤንነትህ ምክንያት ከዚህ ቢታች ከተዘረዘሩት ችግሮች በስራህ ላይ ወይም በሌሎች የእለት ተእለት እንቅስቃሴ ላይ ተከስተዉ ነበር?			
13	በስራ ላይ የምታሳልፈዉን ጊዜ አቃርጠሃል?	1. አዎን 2. አይደለም		
14	መስራት ከምትፈልገዉ በታች አድርጎህ ነበር?	1. አዎን 2. አይደለም		
15	ስራህን ወይም የእለት ተእለት እነቅስቃሄህን ቀንሰህ ነበር	1. አዎን 2. አይደለም		
16	ስራህን ወይም የእለት ተእለት እነቅስቃሄህን ችግር ገጥሞህ ነበር(ብዙ ጊዜ ይወስድብህ ነበር)	1. አዎን 2. አይደለም		
	ባለፉት አራት ሳምንታት ዉስጥ ስሜታዊ ጤንነትህ ምክንያት ከዚህ ቢታች ከተዘረዘሩት ችግሮች በስራህ ላይ ወይም በሌሎች የእለት ተእለት እነቅስቃሴ ላይ ተከስተዉ ነበር?			
17	በስራ ላይ የምታሳልፈዉን ጊዜ አቃርጠሃል?	1. አዎን 2. አይደለም		
18	መስራት ከምትፈልገዉ በታች አድርጎህ ነበር?	1. አዎን 2. አይደለም		
19	ራህን ወይም የእለት ተእለት እነቅስቃሄህን እንድተለመደዉ በትክክል አትሰራም ነበር	1. አዎን 2. አይደለም		
20	ባለፉት አራት ሳምንታት ዉስጥ አካላዊ ፤ስሜታዊ ጤንነትህ ከቤተሰቦችህ፤ ከጋደኞችህ፤ከጎረቤቶችህ ጋር በማህበራዊ እነውስቃሴ ላይ ያስከተለብህ ተፅኖ?	1. ምንም አይፈጠርም 2. በትንሹ ይፈጥራል 3. መካከለኛ ይፈጥራል 4. በመጠኑ ይፈጥራል 5. በጣም ይፈጥራል		

21	ባለፉት 4 ሳምንታት ዉስጥ ምን ያክል የሰዉነት ህመም ተሰምቶዋታል?	1) ምንም አይፈጥርም 2) በትንሹ ይፈጥራል 3) መካከለኛ ይፈጥራል 4) በመጠኑ ይፈጥራል 5) በጣም ይፈጥራል
22	ባለፉት 4 ሳምንታት ዉስጥ የህመም ስሜትዎ በሚሰሩትን የእለት ስራ(ከቤት ዉጭም ሆነ ከቤት ዉስጥ ስራዎት) ላይ ችግር ይፈጥራል ?	1. ምንም አይፈጥርም 2. በትንሹ ይፈጥራል 3. መካከለኛ ይፈጥራል 4. በመጠኑ ይፈጥራል 5. በጣም ይፈጥራል

የሚከተሉት ጥያቄዎች እርስዎ ባለፉት 4 ሳምንታት ዉስጥ ምን ስሜት እንዳለዎት ና ነገሮች እንዴት እንደነበሩ የሚገልጹ ናቸዉ፡፡ለእያንዳንዱ ጥያቄ እርስዎ የነበሩበትን ስሜት የሚገጸዉን መልስ ይምረጡ፡፡

✓ ባለፉት 4 ሳምንታት ዉስጥ ምን ያክል ጊዜ

	ጥያቄዎች	የመልስ ምርጫዎች					
		ሁልጊዜ	አብዛኛዉን ጊዜ	መካከለኛ ጊዜ	በተወሰነ ጊዜ	በጣም ትንሽ ጊዜ	እከል አይፈጥርም
23	የሙሉነት ስሜት ተሰመቶዋት ያዉቃል?	1	2	3	4	5	6
24	በጣም ብስጩ ሰዉ ነበሩ ?	1	2	3	4	5	6
25	የዝቅተኝነት ስሜት ና ይህን ለማስወገድ የሚከብድ ስሜት ተሰምቶዋት ያዉቃል?	1	2	3	4	5	6
26	ሰላምና የረጋ ስሜት ተሰምቶዋት ያዉቃል?	1	2	3	4	5	6
27	ብዙ ሀይል ነበረዎት?	1	2	3	4	5	6
28	የመከፋት ና የድብርት ስሜት ተሰምቶዋት ያዉቃል?	1	2	3	4	5	6
29	ከጥቅም ዉጭ የመሆን ስሜት ይሰማሃል?	1	2	3	4	5	6
30	የምትደስት ሰዉ ነበርክ/ሽ?	1	2	3	4	5	6
31	የድካም ስሜት ይሰማሃል?	1	2	3	4	5	6
32	ባለፉት 4 ሳምንታት ዉስጥ በአካላዊ ወይም ስነ አእምሮ የጤና ችግሮች ምክንያት በማህበራዊ እንቅስቃሴ Ñ>ዜዋት ለይ(ለምሳሌ፣ጓደኛ ፤	1. ሁልጊዜ 2. አብዛኛዉን ጊዜ 3. አንዳንድ ጊዜ

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		4. በጣም ትንሽ ጊዜ 5. ምንም እክል አይፈጥርም

	የሚከተሉት ጥያቄዎች ለእርሰዎ ምን ያክል እዉነት ወይም ሀሰት ናቸዉ?					
	ጥያቄዎች	በትክክል እዉነት	ብዙዉን ጊዜ እዉነት	አላዉቅም	ብዙዉን ጊዜ ሀሰት	በትክክል ሀሰት
33	ከሌሎች ሰዎች እኔ በትንሹ የምታመም እመስላለሁ					
34	እንደማዉቃቸዉ ጤነኛ ሰዎች እኔም ጤነኛ ነኝ					
35	የጤናየ ሁኔታ እየባሰ ይመስለኛል					
36	ጤናዬ በጣም ጥሩ ነዉ					

አመስግናለዉ፡፡

Gucaa gaffilee fi Safartuuwan

Yuunivarsitii Jimmaa

Kolleejii Fayyaa Hawaasaa fi saayiinsii meedikaala

Muummee Narsiingii

Gaaffiilee qorannoo dhibamtootin dhibbaa dhiigaa hospiitaala yuniversiti jimmaa keesssatti hordofan, haala qulqullina fayyaa isaan fi rakkinoota qulqullina fayyaa isaani waaliin walqabatee jiru qorachuu taha.

Unka Eeyyama Gaafachuu:

Dursiinee harka fuune. Ani maqaan koo ………………………….. kaniin jedhamu kaniin dhufee Yuuniversiitii Jimmaa irraati. Nuti waa'ee dhibamtootini dhiibba dhigaa Hospitaala Yuuniversiiti Jimmaatti hordofan, haala qulqullina fayyaa isaan fi rakkinoota qulqullina fayyaa isaani waaliin walqabatee jiru qorachuu taha. Qorannoo kana keesssatti hirmaanaan isin gootan fooyya'insa yaalii dhibamtootni qulqullina fayyaa isaan godhan keessatti bakka olaana qaba. Gaaffiin kun yoo bayyate daqiiqaa 25 fudhata. Sababa qorannoo kana keessatti hirmaataniif rakkini gama, kaffaltii fi xiinsammuu, akkasuumas tajaajila fayyaa fudhatan irratti rakkoo tokkoollee hin jiru. Hicciitiin yaada isin kenniitanii dhuunfaadhan ifati bahee nama biraatiif ykn dhaabata kamiif iyyuu kan hin laatamne tahuu isaa waada isiniif galla. Qorannoo kana keessaatti hirmaachuu fi hirmaachuu dhiisuu,akkasumas addaan kutuuf mirga guutuu qabdu. Qorannoo kana keessaatti hirmaachuuf fedha qabdu?

1. Eyyee ………………………. Gaafii kee itti fufi.
2. Lakkii……………………….. Achuma dhaabiiti gaafatamaa galatoomfadhu.

Maqaa Gaafataa……………………………. Guyyaa …………………
Mallattoo……………………………..

Maqaa nama qorannoo kana hordofaa jiruu……………….guyyaa………….. mallattoo………….

KUTAA TOKKOFFAA

Gaaffiilee armaan gaditti qopha'an gafadhuutii bakka duwaa jirutti guuti. Kanneen filannoo qabaniif deebii gaafatamaan kenne itti mari. Kanneen filannoo hin qabneef deebii gaafatamaan kennee bakka duwwaa jirutti guuti.

1. Umuriin kee meeqa? Waggaa _____
2. Saala
      a. dhiira
      b. dhalaa

3. Sabni kee maali?

   1. Oromoo
   2. Amaara
   3. Dawuroo
   4. Yeemi
   5. Kan biraa (adda baasi) _____

4. Amantiikee maalii?

   1. Musliima
   2. Ortodoxii
   3. Protestaantii
   4. kaatolikii
   5. Kan biraa (adda baasii) _____

5. Haala fuudhaa fi heruma

   1. Fuudheera/herumeera
   2. Hin fuune/hin heerumne
   3. Walhiikneerra
   4. Narraa duhe/duute
   5. Kan biraa (adda baasi) _____

6. Dalagaan kee maali?

   1. Hojjetaa mootummaa
   2. Daldalaa/daldaltuu
   3. Qote bulaa
   4. Haadha warraa manaa
   5. Hojjetaa guyyaa
   6. Kan biraa (adda baasi) _____
   7. Sadarkaa barumsaa isa olaanaa ati barattee _____
   8. Waggaattii galii ati argattuu osoo qarshiitti jijjiramee hamami tahaa? _____.
   9. Gatii dawaa kanaa eyyuutuu kafalaa?
             i. Ofii kootii
             ii. Warraa koo

iii. Bilisaan

iv. Dhabata ani keessaa hojjedhu

v. Kan biraa(adda baasi) _____

KUTAA LAMMAFFAA

Odeeffanno dhibee dhiibaa dhiigaa wal qabatan

1. Guyyaan ati dawa dhiibaa dhigaa kana fudhachuutti eegaalte? Waggaa _____ dura.

2. Dhibee dhibbaa dhigaa kana ala dhibee isin yeroo ammaa kana qabdan jiraa? (deebii tokkoo ol filachuun ni danda'ama).

   1. Lakkii

   2. Dhukkuba onnee

   3. Millikoo sochohuu hin dandahu

   4. Millikoo/fuulli koo dhitahee jira

   5. Ijikoo na hin hubatu

   6. Rakkoo kale

   7. Afuura na kuta

   8. Lapheen koo na rukkuta

   9. Kan biraa (adda baasi)

3. Sababa dhibee dhibbaa dhigaa kanaan rakkoon cimaan isin mudate jirra?

   i. eeyyee

   ii. lakkii

4. Guyyaatti kiniina meeqa fudhattuu dhibee dhibba dhiigaa kanaaf? _____

5. Guyyaatti almeeqa fudhatuu dawaa kana? Guyaatti al _____

6. Guyyoota sadan darbaan keessaattii dawwaa ossoo hin fudhatiin almeqa osoo hin fudhatiin haftanii? _____

7. Deebiin lakkoofsa 6 [ffaa] tokkoo fi isaa ol yootahee, sababni isaa maalii?

   A. Waan nattii foyya'eef

   B. Dawa fudhachuu dagadheeni

   C. Kan biraa (adda baasi) _____

KUTAA SADAFFAA

Gaaffilee Rakkoolee haala fooya'insaa jiruu fi jireenya isaani ilaalchisee

Lakk.	Isiin yeroo hangami	Guyyaa hundaa 4	Darbee darbee 3	Hamma xiiqqoo 2	Goonkuma 1
1	Tamboo aarsitu?				
2	Alkooli dhugdu?				
3	Nyaata fati baay'ee qabu nyaattu?				
4	Mudura nyaattu?				
5	Fudura nyaattu?				
6	Nyaata ho,a fi ariifachiisa fkn bupha,burger nyaattu?				
7	Soogida nyaata keessanirra gootu?				
8	Sochii jabeenya qamaa irraatti hirmaatan?				
9	Furdinnaa qamaa hir,isuf yaaltan?				
10	Bashaanantan?				
11	Hirribaa gahaa argattan?				

KUTAA AFRAFFAA:- Gaaffilee qarqarsaa kilinikiin dhukkuboota yeroo dheeraf yaalamanirratti hangaam akka itti gammaadan yookin qufaan ilaalchisee, haala taartiiba sanduuqa keessa kennamen deebisa.

sadarkaa qabxillee saanduqaa keessa akka armaan gadii ta'a

5= Sirrittin degaara 4=Nan degaara 3= deebi hin qabu 2= Hin degaaru 1= Gonkuma hin degaaru

S.NO	qarqarsaa kilinikaatti hangaam quuftaan	Sadarka				
		5	4	3	2	1
Eddoo qarqarsa						
1.	Ijaarsi hoospitaala kana qulqulludha					
2.	Jidduun seensaa qillensaa hoospitaala gariidha					
3.	Ijaarsi hoospitalichaa ifaa gaha qaba					
4.	Jeequmsi naannoo hoospitaala hin jiru					
5.	Eeddoon dabaree itti eegatan teesuma gaha qaba					
6.	Mana fincaani qulqullu gaha jira					
7.	Kutaa qoorumsaa gahaa qaba					
Meeshalee yaala						
8.	Meeshalee yaala kutaa qoorumsa keessa gahadha					
9.	Meeshalee yaala seeran hojaacha jiran					
Qarqarsaa dooktoora						
10.	Dooktoronni hoospitaala kabajadhan nu qormaatu					
11.	Dooktoroonni yeroo dheeraa fudhaatan nu qormaatu					
Qarqarsaa naarsoota						
12.	Naarsonni hoospitaala kabaajadhan nama yaaluu					
13.	Naarsoonni yaala akka gariitti ibsaan					
Qarqarsaa pharmacy						
14.	Farmaasiistootni hoospitaala kabaajadhan nama yaaluu					
15.	Farmaasiistootni qooricha akka gaaritti nama ibsuu					
Qarqarsaa kutaa galmee						
16.	Hoojatoonni kutaa galmee kabaajadhaan nama yaalu					
17.	Hoojatoonni kutaa galmee haala gariin namaa haasofsiisu					
Qarqarsaa labooratoori						
18.	Labooratoori sirritti argaatu					
19.	Gatiin labooratori kafalamu madalamadha					

KUTAA SHANNAFFAA: GAAFFILLEE SF-36

1. In general, would you say your health is: Walumaaa galaattii akkana jechu dandeetta fayyaa keef

    Baayisee gariidha 1

    Baay'ee gaariidha 2

    gariidha 3

    hameenya hin qabuu 4

    badaadha. 5

2. Waggaa tokko darbee fana wal bira qabdee yoo ilaaltuu, fayyaa kee amma eessarra kawaata?

    Ammaa baay'ee fooyya'adha bara darbeerra...................... 1

    Hangaa tokko foyyee qaba bara darbeerra......................... 2

    Wal fakkataadha... 3

    Hangaa tokko baroo miti bara darbeera 4

    Ammaa baay'ee hamaatadha bara darbeerra 5

Filannoowan armaan gadii sochiile guuyya keessatti rawaataman. Fayyaan kee amma sochiilee kanarra sii ittisee? Yoo si ittisee hangaam

	eyyen heddu na ittise	eyyen, xiqqoo na ittise	lakki, na hin ittisne
3. Sochilee ciccimoo akka figichaa, meeshaa ulfaata oli fudhu ,ispoortii ulfaata irratti hirmaachu	1	2	3

4. sochiilee jidduu galeessa kan akka tessoo sochoosu,

xaraagdu electika dhibuu	1	2	3
5. Meeshaalee adda adda badhachu ykn olfudhu......................	1	2	3
6. sadarkaa olba'iinsa gamoo heeddurra bahu...........................	1	2	3
7. sadarkaa olba'iinsa gamoo tokkorra bahu	1	2	3
8. ofirra nanna'u, yeroo hojii jilbarra ta'uun			
fayaadamu ykn dugda fi irren naanna'u	1	2	3
9. Kilomeetita 1.5 caalaa deemu daandeessu...........................	1	2	3
10. daandii heeddurra deemtani	1	2	3
11. dandii tokkoorra deemtani	1	2	3
12. Ofi keessani qaama dhiiqatan yookiin uffata uffaatani.......	1	2	3

Torbee afran dabreef, sababa **faayyumma qaama** keetin yeroo dalagaa kee yookin dalagaa baratama guyya guyyaatti dalaagdu rakkoowaan armaan gadii qabda?

	eyyee	lakki
13. yeroo dalagaa kee yookin hojii birarra,		
yeroo muratta 1		2
13. yeroo dalagaa kee yookin hojii birarra muratta		
14. Kan barbaadu gadi hojjate argata................................	1	2
15. Hojiis ta'ee kan biraa hojaachu dadhabu.......................	1	2
16. Dalagaas ta'ee hojiin bira itti ulfaachu		
(Fkn, qarqarsa biraa itti barbaadu)..	1	2

Torbee afran dabree, sababa fedhi of si jibbisisun ykn si yaadeessun keetin yeroo dalagaa kee yookin dalagaa ba
    guyya guyyaatti dalaagdu rakkoowaan armaan gadii qabda,?

		eyyee	lakki

17. yeroo dalagaa kee yookin hojii birarra muratta   1   2

18. Kan barbaadu gadi hojjate argata.................................   1   2

19. Dalagaa kees ta'ee hojii bira xiyyeeffanna hin hojattu...   1   2

20. Torbee afran dabree,hamam rakkoon faayyumma qaama keetin   yookin fedhi of si jibbisisun ykn si yaadeessu hariiro matii, hiriyaa, ollaa ykn gareeirra addan si foyee ykn basee?

hundaa miti.................................... 1

hamaa xinnoo 2

jiddu galeessa................................. 3

hamma baay'ee.............................. 4

Baayi'isee 5

21. Torbee afran dabree hamam dkukkubbi qaama qabda?

Hin qabu....................................... 1

baay'ee xiqqoo qaba....................... 2

xiqqoo qaba.................................. 3

jiddu galeessa qaba 4

baay'ee qaba 5

baayi'isee qaba 6

22. Torbee afran dabree, dhukkubin hangam hojii keettirra isin ittise (hojii alaa fi hojii manarra)?

hundaa miti.................................. 1

Hamma xiqqoo.............................. 2

jiddu galeessa............................... 3

Baay'ee 4

Baayi'isee 5

Gaaffillen armaan gadii torbee afran dabreef waan sitti dhagahamee fi akkata ta'eewwan nannoo isin faana ta'a turaan ilaala. Gaaffii hundaafu, deebii tokko kenni akkata fedhi keessanitti dhihatun

	yeroo hundaa	yeroo bay'ee	yeroo murtawa	yeroo muraasa	yeroo xinno	yeroo hundaa hin qabu
23. Annisaan guutuun sitti dhagahama?	1	2	3	4	5	6
24. Baay'ee aartee beekta?	1	2	3	4	5	6
25. Baayee hin gammaduu waanti sigaaddisiisu jiraa?..............................	1	2	3	4	5	6
26. Tasgaabbi fi nageenyi siitti dhagahamee beeka?	1	2	3	4	5	6
27. Annisa baay'ee qabda?.........................	1	2	3	4	5	6
28. Gaaddii baay'ee sitti dhaaga'maa ?.......	1	2	3	4	5	6
29. Waan midhaamitte sitti fakaataa?	1	2	3	4	5	6
30. Gammaachun sitti dhagaahamee beeka?	1	2	3	4	5	6

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31. Dadhaabbin sitti dhagahamee beeka?...   1   2   3   4   5   6

32. Torbee afran dabreef yeroo hangamif faayyumma qaama kee ykn fedhi of si jibbisisun ykn si yaadeessu dalaaga hawaasa (hiriyaa dawaachu, fira fi k.k.f) irraa isin ittise?

yeroo hundaa 1

yeroo baay'ee 2

yeroo muraasa 3

yeroo xiqqoo 4

yeroo hundaa hin qabu 5

Himootni armaan gadii siif dhugaa moo soba?

	Hundinuu dhugaadha	baay'een dhugaadha	Hin beekamu	Baay'een sobadha	Hundinu sobadha
33. Namoota biroo fana hangaa tokko foyyee qaba	1	2	3	4	5
34. Ani amma akka nama kamitu fayyaa qabeessaa...	1	2	3	4	5
35. Akka tilmaamutti fayyaan koo dadhaba deeema.	1	2	3	4	5
36. Fayyaa koo baay'ee baayeessa.	1	2	3	4	5

GALATA QABDAAN.

How to Score the SF-36 Questionnaire

Step 1 Scoring question

Question number	ORIGINAL RESPONSE	RECORDED VALUE
1, 2, 20, 22, 34, 36	**1**	100
	2	75
	3	50
	4	25
	5	0
3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1	0
	2	50
	3	100
13, 14, 15, 16, 17, 18, 19	**1**	0
	2	100
21, 23, 26, 27, 30	1	100
	2	80
	3	60
	4	40
	5	20
	6	0
32, 33, 35	**1**	0
	2	25
	3	50
	4	75
	5	100

STEP 2: AVERAGING ITEMS TO FORM 8 SCALES

SCALE	NUMBER OF ITEMS	AFTER RECORDING AS PER TABLE 1, AVERAGE THE FOLLOWING ITEMS
Physical functioning	10	3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Role physical	4	13, 14, 15, 16
Role emotional	3	17, 18, 19
Vitality	4	23, 27, 29, 31
Mental health	5	24, 25, 26, 28, 30
Social functioning	2	20, 32
Bodily Pain	2	21, 22
General health	5	1, 33, 34, 35, 36

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research thesis and for provision of required progress reports as per terms and conditions of the college of Public Health and medical sciences in effect at the time of grant is forwarded as the result of this application.

Name of the student: _____

Date._____   Signature _____

APPROVAL OF ADVISORS

This research thesis has been submitted with my approval as University advisor.

Name of the first advisor: _____

Date._____   Signature _____

Name of the second advisor: _____

Date._____   Signature _____

Name of internal examiner_____

Date._____   Signature _____

Name of external examiner: _____

Date._____   Signature _____

Date of submission: _____