

HEALTH RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG PATIENTS WITH PERIPHERAL ARTERY DISEASE AT TIKUR AMBESSA SPECIALIZED HOSPITAL, ADDIS ABABA, ETHIOPIA: A CROSS SECTIONAL STUDY



BY Yadani Michael (MD, Vascular Fellow)

August, 2024

ADDIS ABABA, ETHIOPIA



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**Addis Ababa University
College of Health Sciences
School of Medicine
Department of Surgery**

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A RESEARCH THESIS SUBMITTED TO DEPARTMENT OF SURGERY, SCHOOL OF MEDICINE, COLLAGE OF HEALTH SCIENCE, ADDIS ABABA UNIVERSITY AS A PARTIAL FULFILLMENT OF SUB-SPECIALITY IN VASCULAR AND ENDOVASCULAR SURGERY

Declaration

I, Yadani Michael, do hereby declare that this research thesis is a result of the works of my own making except where due is made in a review of the previous literature in the content and by my knowledge, has never been submitted or any academic award or qualifications in this Institution.

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List of Abbreviations and Acronym

- PAD –Peripheral Artery Disease
- CVD – Cerebrovascular Disease
- MI – Myocardial Infarction
- ABI – Ankle Brachial Index
- HRQoL – Health Related Quality of Life
- SF-36 – Short – Form 36 Questionnaire
- PF – Physical Functioning
- RP – Role Physical
- RE – Role Emotional
- V - Vitality
- MH – Mental Health
- SF – Social Functioning
- P – Bodily Pain
- GH – General Health
- EQ – 5D - European Quality of Life Questionnaire – Five Dimension
- WHO – World Health Organization
- WHOQOL – BREF – Abbreviated form of World Health Organization Quality of Life Questionnaire
- DM – Diabetes Mellitus
- BMI – Body Mass Index
- ETB – Ethiopian Birr
- LMICs – Low and Middle Income Countries
- TASH –Tikur Ambessa Specialized Hospital
- CAD – Coronary Artery Disease
- NCD – Non- Communicable Disease
- QoL – Quality of Life
- EURO-QOL – European Quality of Life
- PCS – Physical Component Summary
- MCS – Mental Component Summary

ABSTRACT

Background: It is well known that peripheral artery disease reduces health related quality of life and functional status. Health related quality of life (HRQoL) measures patient reported health outcomes.

Objective – To determine HRQoL and associated factors in patients with peripheral artery disease

Method: - A cross-sectional study was conducted at TASH, on patients with PAD who were on follow-up at vascular referral clinic. SF- 36 questionnaire was used to assess HRQoL. SPSS version 27 was used for all statistical analysis. Descriptive statistics and exploratory descriptive analysis for the eight separate domain of SF-36, quantitative and qualitative variables were calculated. Multivariate linear regression was used to calculate the association between sociodemographic factors, clinical factors and health-related quality of life. A significance level of $p \leq 0.05$ was used.

Results – From a total of 114 participants, 78(68.4%) were men. The participants' ages were between 40 and 81 years and a mean age was 63.9 ± 8.5 years. The overall means of HRQoL revealed the lowest score in the Role Physical (RP), 38.3 ± 44.6 and highest score in the Social Functioning (SF), 61.5 ± 26.8 . Factors that affected HRQoL were age, marital status, education level, income, diabetes mellitus, cardiac illness, smoking, rest pain and tissue loss. Mean scores for Physical Functioning (PF), Vitality (V) and General Health (GH) decreased significantly with increasing patient age ($p < 0.001$, 0.048 and 0.012). Vitality scores were also significantly affected by education level ($p = 0.004$). In terms of mental health (MH), higher scores were associated with being married ($p = 0.042$) and having an income greater than 10,000ETB ($p = 0.016$). Patients with cardiac illness have significantly lower scores in PF, RP, V, P, and GH ($p=0.046$, $p= 0.037$, $p=0.03$, $p=0.05$ $p=0.032$). Diabetes mellitus (DM) significantly impacted PF and GH ($p = 0.003$ and 0.020). Previous smokers also have significantly lower scores of PF ($p = 0.037$). Additionally, Rest pain and tissue loss significantly affected all domains of HRQoL ($p < 0.001$).

Conclusions- In conclusion, This study found that mean scores for physical domain were low and mean scores for mental health and social functioning were high. Pain and tissue loss were the most important determinant factors that affected every domain of HRQoL SF 36. Pain management and early intervention of advanced stages of PAD are important components of patient treatment to improve HRQoL.

1. Introduction

1.1. Background

Peripheral artery disease results from any disease that causes stenosis or occlusion of the arteries, most often affecting the lower extremity, with atherosclerosis being the most common etiology. An ankle-brachial index of less than or equal to 0.9 in lower extremity is generally used to define PAD. (1) Chronic limb threatening ischemia is a severe form of peripheral artery disease with rest pain or tissue loss.

The clinical presentation of the disease is wide with the majority being asymptomatic. Symptomatic individuals may exhibit intermittent claudication, atypical pain during exertion, or ischemic rest pain. Few patients (1% to 2%) present with critical limb ischemia, with ulceration or gangrene. (2)

PAD is associated with reduced functional status and quality of life. However it is often underdiagnosed and undertreated. (3) The goals of treatment in PAD are not only to reduce cardiovascular and limb events, but also to improve health related quality of life. (2) (3) In this sense, assessing patients' symptoms, functional status, and HRQoL should be incorporated into evaluating all treatments.

Health related quality of life is an individual's perceived physical, emotional and social well-being. (3) (4) Valid and reliable questionnaires are important to assess HRQoL.

Quality of life questionnaires assess the overall well-being and functional status including emotional and social aspects of life. (4) They can be general and disease-specific questionnaires. The SF-36, which is among the general HRQoL questionnaire was used in this study.

The SF-36, which was initially developed in United States by Research and Development (RAND) in 1992 as a part of Medical Outcome studies (MOS); is considered as a standard tool from the general health related quality of life questionnaires to assess patients with vascular disease. (5) The SF-36 has eight health domains. These include physical functioning, bodily pain, role limitations due to physical problems, and role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. A single item that provides an indication of perceived health change is also included. (2)

1.2. Statement of the Problem

While extensive research on peripheral artery disease has been conducted in high-income countries, the burden of this condition in Low- and Middle-Income Countries (LMICs) has been largely overlooked. Nevertheless, LMICs are currently undergoing an epidemiological transition marked by increase in the prevalence and burden of cardiovascular diseases, due to factors such as industrialization, urbanization, and a rise in metabolic risk factors. (8)

Health-related quality of life in patients with Peripheral Arterial Disease is generally poorer when compared to that of healthy individuals. In a community based study in Edinburgh, patients with intermittent claudication were found to have lower median health-related quality of life scores than patients without claudication in all domains except social functioning and mental health ($P = 0.008$). (2) The impact on patients with claudication closely resembled that observed in individuals with angina. (2)

PARTNERS, a nationwide survey in primary care in the USA, demonstrated that a HRQoL burden of PAD similar in magnitude with that of other cardiovascular disease. (9) Patients with PAD were more limited by leg-related symptoms whereas patients with other cardiovascular disease were more limited by cardiac symptoms. (9) Patients with chronic limb threatening ischemia have worse QoL than patients with intermittent claudication. (10)

Overall studies on PAD and quality of life is very limited in LMICs like Ethiopia, even though study showed PAD to be the most common condition encountered at vascular clinic at Tikur Anbessa Specialized Hospital. (11) So the objective of this study is to determine HRQoL and associated factors in patients with peripheral artery disease (PAD).

1.3. Significance and Rationale of the Study

PAD is responsible for a significant degree of morbidity and mortality as well as diminished functional status and HRQoL in affected individual. Burden of PAD including its prevalence and its impact on HRQoL is relatively well studied in developed countries. In LMICs like Ethiopia, PAD and other cardiovascular diseases receive little attention even though they are on the rise.

So, this study assessed the impact of PAD on HRQoL and identified factors associated, providing useful information to set protocol that help us improve medical care of patients with PAD. In future, it will also be a ground for further studies.

1.4. Research Questions

1. What is the impact of Peripheral Artery Disease (PAD) on HRQoL?
2. What are the factors associated with low HRQoL in patients with PAD?

2. Literature Review

2.1 Peripheral Artery Disease Epidemiology and Health Related Quality of Life

Globally, 236.62 million people were affected with peripheral artery disease in 2015, among whom 72.91% were in LMICs. (1) Patients with PAD in LMICS were relatively younger when compared to those in HICs. (1) In a study conducted at Tikur Ambessa Specialized Hospital on the pattern of vascular diseases, peripheral artery disease contributed to the majority of cases, accounting for 34.2%. (11)

Most studies demonstrated that health-related quality of life in patients with peripheral artery disease is poorer when compared to that of healthy individuals. In a study done in UK, patients with intermittent claudication had worse median health-related quality of life scores when compared to patients without claudication in all domains of SF -36, except social functioning and mental health. (2) The mean physical component score for individuals with claudication was significantly lower than the score of individuals without claudication ($P \leq 0.001$). (2) A significant association was observed between intermittent claudication and a diminished physical component score ($P = 0.008$).

In the PARTNERS, a nationwide survey in primary care in the USA revealed that patients with PAD had poorer HRQoL that is similar to other cardiovascular disease. (9) The Physical Function score of PAD was 55.7 ± 1.2 , but it was 64.1 ± 1.0 in the reference group. Similarly PF score was 55.5 ± 1.1 in the other-cardiovascular disease groups. Participants with both PAD and other CVD had lower PF score than PAD or other CVD alone. ($P < 0.001$) (9)

In study done in Brazil, which used abbreviated WHOQOL-BREF, the physical and environmental domains were the lowest, with the score of 64.2 ± 27.9 and 97.2 ± 20 respectively, while the highest score was for the social relationships domain, with a mean of 150.2 ± 28.9 points. (12)

2.2 Associated Factors

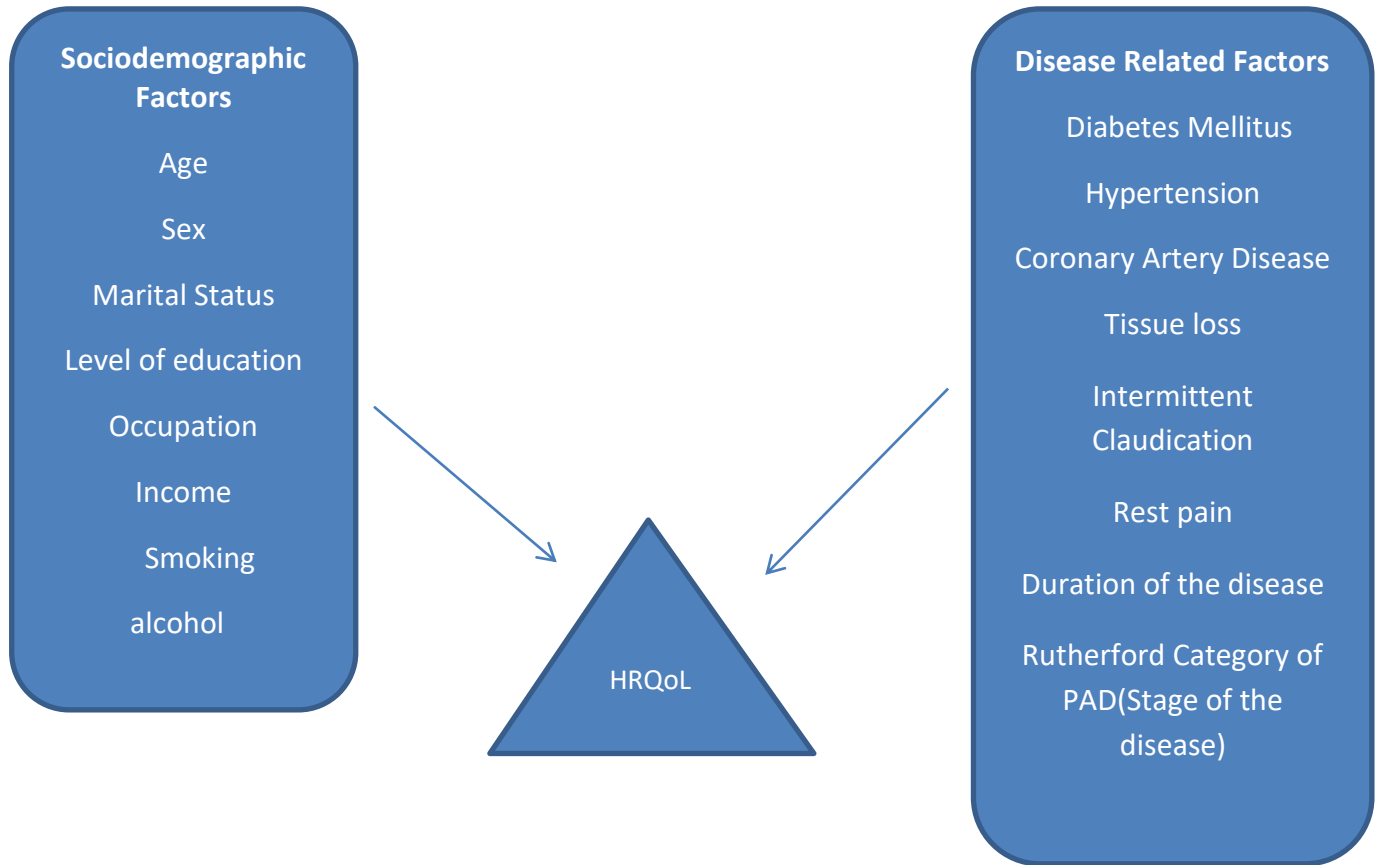
Factors that were found to affect health related quality of life in PAD include age, sex, patients' functional status, complications, comorbidities and treatment.

A study done in Brazil revealed that men demonstrated higher mean scores than women in all domains ($p = 0.098$) except the social relationships domain. People with a higher educational level had higher QoL scores than people with low educational level with a p value of 0.26 in all domains except social relationships. (12) Patients with wounds had poor physical ($p = 0.011$), psychological domains ($p = 0.013$) and total QoL scores ($p = 0.003$). (12)

In one study that used norm based which used norm based scoring method of SF 36, patients with no-option CLTI demonstrated low scores for every domain of the SF-36; worst scores were seen in physical functioning, role physical functioning, and bodily pain, scores being 30.6 (23.8-37.5), 22.8 (11.9-33.8) and 30.4 (24.7-36.1) respectively. (10) Factors associated with QoL were diabetes, female gender, body mass index, and the ankle-brachial index at rest we on multivariate analysis ($R^2 = 0.137$).

In Evans et al. study, lower HRQoL was observed in smokers than nonsmokers in terms of physical functioning. (13) Similar study reported by Fritschi et al also found that the nonsmokers had higher scores in vitality, physical/ social functioning, emotional role and mental health than the smokers (14)

2.3. Conceptual Framework



3. Objectives

3.1. General Objective

To determine health related quality of life and factors associated in patients with PAD

3.2. Specific Objective

To determine socio-demographic status of patients with PAD

To determine health related quality of life in patients with PAD

To determine factors associated with QOL

4. Methods AND Materials

4.1 Study period and setting

The study was conducted in Tikur Anbessa Specialized Hospital from February to June, 2024. In 1998, the hospital was given to Addis Ababa University by the ministry of health for the faculty as the main teaching hospital. The hospital gives services to approximately 370,000-400,000 patients per year. The hospital receives patients who are referred from across the country as well as from health facilities in Addis Ababa. It was selected as study setting for this survey because it is the largest tertiary hospital with vascular unit and it is possible to obtain a sufficient number of patients that comes from different parts of Ethiopia.

4.2. Study Design

A cross-sectional study design was used.

a

4.3. Population

4.3.1 Source population

All adult patients on follow up at TASH vascular clinic who presented to TASH during study period

4.3.2 Study population

Adult patients with peripheral artery disease, who were on follow up at TASH.

4.4 Inclusion and Exclusion Criteria

4.4.1. Inclusion Criteria

Patients with peripheral artery disease aged 40 years and above, who consented for the survey, were included.

4.4.2 Exclusion criteria

Patients who had major amputations, (ankle and above ankle) and patients with significant weakness due to stroke were excluded.

4.5 Sample size determination and sampling technique

4.5 Sample size determination and sampling techniques

4.5.1 Sample Size determination

$$n = z^2 p(1-p) / d^2$$

□n:- desired sample size

□z:- value from standard normal distributions set at 1.96 (corresponds to 95% confidence level)

□p = 10.8%, proportion in target population, which is prevalence of peripheral artery disease.
(21)

□d: absolute precision or accuracy, set at 0.05.

$$n = 1.96^2 \times 0.108 \times (1 - 0.108) / (0.05)^2$$

$$n = 148$$

4.5.2 Sampling Technique

Convenient sampling method was used to incorporate all study population of interest who were on follow up at time of data collection.

4.7 Study Variables

4.7.1 Independent Variables

Age	Coronary Artery Disease,
Sex	Smoking
Marital Status	Intermittent Claudication
Level of education	Rest pain
Income	Tissue loss
Diabetes Mellitus	Rutherford Category of PAD
Hypertension,	

4.7.2 Dependent Variables

Health Related Quality of Life/HRQoL

4.6 Data collection and Procedures

4.6.1 Data collection Instrument

Two types of questionnaires were used to conduct this study: a socio-demographic, and the SF-36 questionnaires. Socio-demographic variables include age, sex, residence, religion, educational level, occupation, smoking and alcohol use. Clinical variables include ABI, stages of the disease, treatment and comorbidities. Validated Amharic version of the SF - 36 was used for the interview. (15)

4.6.2 Data Collection Procedure

Data was collected between February and June 2024 through self-administered and interviewer-guided questionnaires. Written informed consent was obtained from all participants before data collection. Face-to-face interviews were used to collect information on sociodemographic data and health related quality of life. Additionally, chart reviews were done to gather information on clinical data of the participants.

4.11. Data Quality Management

The principal investigator gave both theoretical and practical training for the data collectors on ABI measurement, data collection techniques and SF 36 questionnaire. The principal investigator also supervised all activities during the data collection. Data completeness and consistency were checked immediately with questionnaires with missed variables were given back to data collectors.

4.12. Data Analysis Procedure

After the data were collected the completeness and consistency of the questionnaire was checked visually. Then SPSS version 27 was used to enter clean and analyze the collected data.

Descriptive statistics for the eight domain of SF-36, other quantitative and categorical variables, including mean, SD and percentage were calculated. The mean scores of SF 36 domains were calculated for sociodemographic and clinical factors. Reliability assessment was done by checking internal consistency using Cronbach's alpha coefficient. A Cronbach's alpha coefficient was calculated and found to be 0.97, implying its reliability.

Multivariate linear analyses were carried out to see the association between sociodemographic, clinical, peripheral arterial disease status and health-related quality of life. A P value of <0.05 was used to represent significance.

4.13. Ethical Consideration

Ethical clearance was obtained from School of Medicine, Collage of Health Science Addis Ababa University Institutional Review Board. Additionally informed consent was also obtained from each respondent by explaining the objectives of the study. All Participants were informed that their participation is voluntary and the information they provided would be used for research purposes only and kept confidential. The study had no invasive or harmful procedure and the participants were fully aware of that.

4.14. Operational Definition

Peripheral Artery Disease – Atherosclerotic disease of lower extremity with ABI of ≤ 0.9

Intermittent Claudication – pain in the calves, thighs or buttocks typically brought on by walking and relieved by rest

Rest pain – burning, tingling, and numb sensation that occurs at rest

Tissue loss – any wound or gangrene that occurs due to ischemia

Minor amputations – any amputations below the ankle

5. Result

Socio-Demographic and Clinical Characteristics

A total of 114 participants were included in the study, with 68.4% (n = 78) being men. (Table 1) The ages of the participants were from 40 to 81 years and the mean age was 63.9 ± 8.5 years. Nearly half of the participants (48.2%, n = 55) were between 60 and 69 years old. Socio-demographic analysis revealed that 74.6% were married, 72.8% were Orthodox, and 84.2% resided in urban areas. Regarding education and occupations, 36% of the participants had college education, and 35.1% were retired. Most participants reported a monthly income of less than 10,000 ETB. Table 1

Out of the 114 participants, 31.6% (n=36) had history of smoking, of which, only 2.6 % (n=3) reported that they were actively smoking, while 67 patients had a history of alcohol consumption. (Table 2) A significant majority, 66.7%, had one or more comorbidities, with hypertension being the most prevalent, affecting 56.1% of the patients. Additionally, 72.8% of the participants experienced intermittent claudication, 27.2% had rest pain, and the majority (70.2%) underwent surgical management, while 7% of the individuals had no options of vascularization. Table 2

Table 1 Socio Demographic Characteristics

Socio Demographic Characteristics	Frequency(n=114)	Percent
Age range (Mean±SD = 63.9 ± 8.5)	40-49	8
	50-59	19
	60-69	55
	70-79	29
	>80	3
Gender	Male	78
	Female	36
Marital Status	Married	85
	Single	7
	Divorced	4
	Widowed	18
Residence	Urban	96
	Rural	18
Religion	Orthodox	83

	Muslim	16	14.0
	Protestant	13	11.4
	Others	2	1.8
Education Level	Can't read or write	19	16.7
	Can read and write	8	7.0
	Primary school	20	17.5
	Secondary school	26	22.8
	College/tertiary school	41	36.0
Occupation	Self employed	17	14.9
	Government employed	11	9.6
	Farmer	8	7.0
	Business	6	5.3
	Private/NGO employees	2	1.8
	Retired	40	35.1
	Unemployed	30	26.3
Income	<10000ETB	90	78.9
	10000-50000ETB	24	21.1

Table 2 Behavioral and Clinical Characteristics

		No(n=114)	%
Smoking	Previous smoker	33	29
	Active smoker	3	2.6
	Non Smoker	78	68.4
Alcohol	Alcohol consumers	67	58.8
	Alcohol non-consumers	47	41.2
Exercise	Yes	12	10.5

	No	102	89.5
Comorbidities	Yes	76	66.7
	No	38	33.3
Hypertension	Yes	64	56.1
	No	50	43.9
Diabetes Mellitus	Yes	40	35.1
	No	74	64.9
Cardiac Illness	Yes	9	7.9
	No	105	92.1
Intermittent claudication	Yes	83	72.8
	No	31	27.2
Restpain	Yes	31	27.2
	No	83	72.8
Tissue loss	Yes	27	23.7
	No	86	75.4
ABI	>1.3	8	7.0
	0.41-0.90	87	76.3
	0.00-0.400	19	16.7
Treatment	Medical	34	29.8
	Surgery	80	70.2
Minor amputations	Yes	11	9.6
	No	103	90.4
Nonrevascularizable	Yes	8	7.0
	No	106	93.0

Health Related Quality of Life

When the quality of life (QOL) subgroups were examined for all participants regardless of the sociodemographic or clinical factors, the overall means revealed the lowest scores in the domains of Role Physical (RP), Role Emotional (RE), and Vitality (V), these scores were 38.3 ± 44.6 , 46.5 ± 44.8 , and 44.4 ± 20.8 respectively. The highest score was observed in the Social Functioning (SF) and Mental Health (MH), with a mean and standard deviation of 61.5 ± 26.8 and 58 ± 20 respectively.

HRQOL and Associated Factors

Variables that affected health related quality of life (HRQoL) were determined by simple multivariate linear regression at a p-value ≤ 0.05 . In multivariate linear regression analysis age, marital status, education level and income were the sociodemographic characteristics that significantly affected HRQoL.

Mean scores for Physical Functioning (PF), Vitality (V) and General Health (GH) decreased significantly with increasing patient age ($p < 0.001$, 0.048 and 0.012). Vitality scores were also significantly affected by education level ($p = 0.004$). In terms of mental health (MH), higher scores were associated with being married ($p = 0.042$) and having an income greater than 10,000ETB ($p = 0.016$). Social Functioning (SF) was significantly associated with marital status ($p = 0.023$) and education level ($p = 0.006$). Table 3

Patients with cardiac illness have significantly lower scores in PF, RP, V, P, and GH ($p=0.046$, $p= 0.037$, $p=0.03$, $p=0.05$ $p=0.032$). Table 4. The presence of diabetes mellitus (DM) significantly impacted PF and GH ($p = 0.003$ and 0.020). Previous smokers also have significantly lower scores of PF ($p = 0.037$). Table 4 Additionally, Rest pain and tissue loss significantly affected all domains of HRQoL ($p < 0.001$). Table 5

Table 3 Health-related quality-of-life scores and Associated Factors

		PF	RP	RE	V	MH	SF	P	GH
Age	40-49	64.3 ±11.7	39.3 ±18.8	42.8 ±20.2	45± 4.2	50.3 ±5.6	53.5± 9.7	52.8 ±9.1	48.5 ±7.5
	50-59	56.6±5.6	28.9±10.3	42.1 ±11.6	41.3 ±4.5	55.6 ±4.1	57.8± 6.1	47.4 ±5.3	41.3 ±5.3
	60-69	63.5±3.1	45.4±6.2	53.7 ±6.4	49.6± 2.5	65.3 ±2.3	70.7± 2.9	58.1± 2.8	48.2± 2.9
	70-79	40.8± 5.1	31±7.7	37.9± 9.2	40.3 ±4.4	55± 3.8	51.8± 5.3	43.9 ±4.8	37± 4.5
	>80	6.6 ±6.6	36.6±31.7	33.33 ±33.33	8.3 ±6	22.6± 18.8	29.2± 23.2	21.7 ±13.0	8.5± 5.9
	P value	<0.001	0.959	0.926	0.048	0.436	0.32	0.067	0.012
Gender	Male	57.9±3.2	38.6± 5.2	45.6 ±5.6	45.6 ±2.4	60.3± 2.3	61.6 ±3.00	50.9± 2.9	44.0± 2.7
	Female	48.9± 4.2	37.5 ±7.3	48.1 ±8.3	41.8± 3.4	55.9 ±3.2	61.2 ±4.7	52.0 ±3.5	41.1± 3.7
	P Value	0.305	0.561	0.303	0.38	0.85	0.353	0.40	0.83
Marital Status	Married	58.7 ±2.8	41.9± 4.9	50.6 ±5.3	47.6± 2.2	61.9 ±2.1	65.0± 2.8	53.8 ±2.5	45.7± 2.6
	Single	52.1±8.9	28.5 ±18.4	28.5 ±18.4	35±6.7	47.4± 5.8	53.5 ±6.5	42.1 ±7.2	29.3 ±4.3
	Divorced	61.2± 15.9	25± 25	25± 25	40.± 7.4	55.0± 9	65.6 ±11.8	51.2 ±6.3	47.5 ±8.8
	Widowed	37.5± 6.8	28.3 ±9.	38.8 ±11.8	34.7 ±5.6	50.4± 5.1	47.3 ±7.1	43.1 ±6.5	35.6 ±5.8
	P Value	0.15	0.48	0.27	0.13	0.042	0.023	0.068	0.2
Education	Can't read or write	47.1± 5.7	44.7± 10.2	54.4 ±11.5	35.2± 4.8 P=0.004	50.5± 4.7	52.9± 6.4	48.8 ±5.6	37.1 ±5.6
	Can read and write	48.7± 9.3	40.6 ±16.3	37.5± 18.3	36.8± 6.2	57.0± 5.1	54.7± 9.7	49.4 ±7.9	35.6 ±6.5

Level	Primary school	48.7± 9.3	15.0± 8.2	20.0± 9.2	40.1± 4.5	53.2± 4.3	55.1 ±5.7	40.4 ±4.1	34.5 ±5.
	Secondary school	60.4 ±5.6	31.2 ±8.2	38.4 ±9.4	49.2± 3.1	62.9± 3.6	62.2± 4.6	52.9± 4.8	47.5 ±4.1
	College/tertiary school	62.4± 4.3	51.3 ±7.4	63.3± 7.5	49.5 ±3.7	63.6 ±3.3	69.9± 4.4	57.5 ±3.9	49.1 ±3.8
	P value	0.046	0.56	0.017	0.004	0.050	0.006	0.090	0.014
Income	<10000ETB	53.2±2.9	35.6±4.7	45.4 ±5.28	41.7± 2.2	55.9 ±2.1	60.1± 2.8	49.5 ±2.	40.8± 2.5
	10000-50000ETB	61.4± 5.5	47.9± 9.5	50.1 ±9.6	54.4± 4.2	70.1± 3.7	66.7± 5.9	57.8 ±5.3	51.7 ±4.4
	P value	0.831	P=0.338	0.769	0.087	0.016	0.878	0.48	0.302

Table 4 Health Related Quality of Life and Associated Factors

		PF	RP	RE	V	MH	SF	P	GH
Smoking	Yes	53.6±3.	37.1±7.5	41.0± 8.3	47.9 ±3.1	62.2± 3.4	59.3 ±4.4	50.6± 4.4	45.2± 3.9
	No	60.3 ±4.9	40.4± 5.2	48.9± 5.6	42.8 ±2.5	57.4± 2.2	62.4± 3.1	51.6 ±2.6	42.2± 2.7
	P Value	0.018	0.779	0.754	0.067	0.158	0.721	0.545	0.260
Alcohol	Yes	55.3±3.6	37.1±5.4	41.6 ±5.9	43.7±2.6	58.8± 2.7	58.5 ±3.6	49.2± 3.2	42.7± 3.
	No	56.2± 3.5	42.6± 6.7	53.2± 7.2	45.5 ±3.0	59.1± 2.5	65.5 ±3.4	54.2± 2.9	43.7± 3.2
	P value	0.827	0.946	0.673	0.602	0.944	0.663	0.805	0.814
Hypertension	Yes	54.4 ±3.5	33.2± 5.4	42.5 ±6.1	43.5 ±2.6	58.9 ±2.5	61.2 ±3.3	50.8± 2.8	42.2 ±2.9
	No	57.3± 3.9	47.2± 6.6	51.3 ±7.1	45.6 ±3.1	58.8 ±2.9	61.9± 3.9	51.9± 3.7	44.3±3.6
	P Value	0.845	0.053	0.104	0.079	0.309	0.119	0.251	0.170

Diabetes Mellitus	Yes	47.7± 3.9	31.3± 6.6	37.6 ±7.7	40.1± 3.1	56.3± 2.9	58.7± 3.9	48.6± 3.5	36.5± 3.4
	No	59.9± 3.3	43.7± 5.4	51.1 ±5.7	46.7 ±2.5	60.3± 2.4	62.9 ±3.2	52.7 ±2.9	46.6 ±2.7
	P value	0.003	0.125	0.195	0.099	0.171	0.263	0.304	0.020
Cardiac disease	Yes	37.2 ±10.2	11.1 ±11.1	22.2 ±4.7	38.3± 6.2	57.9 ±6.4	61.4±10.5	38.8± 6.2	31.6 ±5.7
	NO	57.2±2.6	41.8±4.4	48.5 ±4.8	44.9 ±2.1	58.9± 1.9	61.5 ±2.6	52.4± 2.4	44.1± 2.3
	P value	0.046	0.037	0.03	0.233	0.700	0.813	0.05	0.032

Table 5 Comparison of Health Related Quality of Life in terms of Disease Severity

	PF	RP	RE	V	MH	SF	P	GH
Rest pain	32.6± 4.7	11.6±5.	17.2±6.7	28.4±3.4	42.7±3.7	37.9±4.7	28.9±3.5	23.4±3
Tissue loss	35.7±5.6	11.1±5.4	14.3±6.7	28.6±3.8	41.2±4.1	37.6±5.3	28.7±4.4	25.5±4.
Intermittent Claudication	63.1±2.6	47.5±4.9	55.2±5.2	48.4±2.1	63.1±1.8	69.4±2.4	57.6±2.3	47.2±2. 3

6. Discussion

Health-related quality-of-life is important in many aspects for patients with peripheral artery disease. Numerous studies have highlighted that PAD severely impairs HRQoL, affecting all domains, with the physical component being particularly affected. In this study, the lowest score was observed in the role-physical (RP) domain, which aligns with findings from research conducted in UK and Turkey. (2) (16) role physical reflects issues related to daily activities due to the physical health limitations imposed by PAD. The Peripheral Arterial Disease Awareness, Risk, and Treatment: New Resources for Survival (PARTNERS) Program also found that the physical component summary score, which includes RP, was significantly lower in PAD patients compared to those without PAD. (9) This reduction is primarily attributed to the negative impact of PAD on physical health which is mainly caused by pain. Conversely, the highest scores were observed in the Social Functioning and Mental Health domains, consistent with studies conducted in the USA, UK, Brazil, and Turkey. (2) (9) (12) (16)

In multivariate linear regression analysis, age, marital status, education level, and income were identified as significant sociodemographic factors affecting health-related quality of life (HRQoL). This aligns with a study conducted in Turkey, which found lower PF scores in individuals older than 51 years when compared to those younger than 50 years. (16) However, in this study, no significant difference in quality of life scores was observed between men and women, contrary to other studies that have reported better quality of life among men. (12) Additionally, participants with higher education levels exhibited better quality of life in terms of vitality and social functioning, a finding that is consistent with studies conducted in Brazil. (12)

Smoking was found to affect physical functioning which is similarly found in other studies. This is consistent with finding reported by Evans et al. and Fritschi et al, which also reported better health related quality of life in terms of physical functioning in nonsmokers. (13) (14)

We found that patients with rest pain and tissue loss have worse outcomes in all SF-36 domain of QoL compared with patients with intermittent claudication. This is in line with other study, which revealed that patients with CLTI demonstrated low scores for every dimension of the SF-36 with worst scores obtained for the physical health domains, including physical functioning, role physical functioning, and bodily pain, scores being 30.6 (23.8-37.5), 22.8 (11.9-33.8) and 30.4 (24.7-36.1) respectively. (19) This finding is also consistent with study done in Brazil that found significant association of wound with physical ($p = 0.011$) and psychological domains ($p = 0.013$) of WHO Brief QoL. (17)

Cardiac illness has significantly affected all domains of HRQoL except RE, MH and SF. This finding is also supported by other studies. In PARTNER, patients with combined PAD and cardiac diseases had significantly lower physical component summary; the same is true in study

done in UK which found patients with angina and PAD had significant lower physical functioning scores. (2) (9) The other studies also reported systemic hypertension and diabetes mellitus has significantly affected HRQoL. (16) In our study even though hypertension was the significant comorbidities found, there was no statistically significant effect on HRQoL, However, there was significant association of DM with PF and GH.

7. Conclusion and Recommendation

Patient with PAD had poor HRQoL which worsened with age of the patient, stage of the disease, comorbidity and severity of pain. Pain and tissue loss were particularly the most important determinant factors that affected every domain of HRQoL as measured by SF 36. Further research into HRQoL in PAD patients is essential for understanding the impact of the disease and the effectiveness of various treatments. These findings highlight the need for developing comprehensive management strategies for advanced PAD, including a multidisciplinary approach. Such strategies should not only address treatment of PAD, but focus on pain management to enhance HRQoL.

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Annex I: English version Informed Consent

Addis Ababa University, School of Medicine, Department of Surgery, Vascular and Endovascular Surgery Unit.

Subject Information Sheet

Hello,

My name is _____ I am here on behalf of Dr. Yadani Michael, a student in Addis Ababa University Department of Surgery, Vascular and Endovascular Surgery Unit. She is conducting a research on “Health Related Quality of Life in Peripheral Artery Disease”. She has received permission from Addis Ababa University School of Medicine.

You are selected to participate in this study because you are currently on follow up and fulfill the inclusion criterion during the research conducting period. Your participation on this study will only be on based on your willingness. You have the right to choose not to take part in this study. If you choose to take part, you have the right to stop at any time. If you are willing to participate or refuse or decide to withdraw later, you will not be subjected to any ill-treatment.

If you agree to participate in the study, your weight, height, Ankle Brachial Index and Toe Pressure will be measured. You will also be interviewed about socio-demographic status, base line clinical data and your health related quality of life related questions. You can stop at any time if you don't feel comfortable during an interview and measurement process. The measurement and filling the questionnaire will take about 15 minutes.

This study will help to assess effect of the disease and treatment on your quality of life and help us to design protocol to improve quality of life for patients with this kind of condition. The information that you provide will be kept confidential by using only code numbers and locking the data. Your name will not be written on the questionnaire. No one will have access to the non-coded data except the principal investigator and the data will not be used for purposes other than the study. Your willingness and active participation is very important for the success of this study.

Informed Consent and/or Ascent Form

Based on the understanding of the above information, are you willing to participate in this study?

A) Yes

B) No

If yes, I will continue and

If no, I will skip to next participant after writing the reasons of refusal _____

Respondent

Signature _____ Date _____

Data collector

Name _____ Signature _____

Questionnaires ID number _____

Date of data collected _____

Result of data collected

A) Completed

B) Not completed

C) Partially completed

D) Refused

Checked by Supervisor: Name _____ Signature _____

For further explanation, use the Principal Investigator's Address;

Name: Dr. Yadani Michael

Email: yadmichael2@gmail.com

Phone no.: +251 912102266

Annex II: English Version Questionnaire

Part 1. Socio-Demographic Data

No.	Questions	Responses	Code
1	Age	_____years	
2	Sex	1. Male 2. Female	
3	Marital status	1. Single 2. Married 3. Divorced 4. Widowed 5. other _____	
4	What is your religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other _____	
5	Residency	1. Urban 2. Rural	
6	Educational level	1. Can't read or write 2. Can read or write 3. Primary school 4. Secondary school 5. College/tertiary school	
7	What is your occupation	1. Unemployed 2. Business 3. Farmer 4. Student 5. Employed 6. Retired 7. Others (Specify) _____	
8	Monthly income	1. <10,000 2. 10,000-50000 3.>50,000	

Part 2. Clinical Data

No.	Questions	Responses	Code
9	Duration since diagnosis of PAD	1. <1 year 2. 1-5year 3. >5year	
10	Category of PAD by Rutherford classification	1. Category 0 2. Category I 3. Category I 4. Category III 5. Category IV 6. Category V 7. Category VI	
11	History of comorbidity	1. Yes 2. No	
12	Types of comorbidity	1. Diabetes Mellitus 2. Hypertension, 3. Coronary Artery Disease, 4. Dyslipidemia 5. Others – Specify _____	
13	History of Smoking	1. Yes 2. No If yes, are you active smoker? 1. Yes 2. No	
14	History of drinking alcohol	1. Yes 2. No	
15	Symptoms	1. Intermittent Claudication 2. Rest pain 3. Ulcerations/tissue loss 4. Others – specify _____	
16	Regular Exercise	1. Yes 2. No	

17	Treatment for PAD	1. Surgery – Specify type of surgery _____ 2. Medical	
22	ABI	1. Right _____ 2. Left _____	

Part 3 -36 - Item short form survey Instrument (SF – 36)

Choose one option for each questionnaire item.

1. In general, would you say your health is:

- 1 - Excellent
- 2 - Very good
- 3 - Good
- 4 - Fair
- 5 – Poor

2. **Compared to one year ago**, how would you rate your health in general **now**?

- 1 - Much better now than one year ago
- 2 - Somewhat better now than one year ago
- 3 - About the same
- 4 - Somewhat worse now than one year ago
- 5 - Much worse now than one year ago

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?

		Yes, limited a lot	Yes, limited a little	No, not limited at all
3	Vigorous activities , such as running, lifting heavy objects, participating in strenuous sports	1	2	3
4	Moderate activities , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
5	Lifting or carrying groceries	1	2	3
6	Climbing several flights of stairs	1	2	3
7	Climbing one flight of stairs	1	2	3

8	Bending, kneeling, or stooping	1	2	3
9	Walking more than a mile	1	2	3
10	Walking several blocks	1	2	3
11	Walking one block	1	2	3
12	Bathing or dressing yourself	1	2	3

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?**

		Yes	No
13	Cut down the amount of time you spent on work or other activities	1	2
14	Accomplished less than you would like	1	2
15	Were limited in the kind of work or other activities	1	2
16	Had difficulty performing the work or other activities (for example, it took extra effort)	1	2

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)?

		Yes	No
17	Cut down the amount of time you spent on work or other activities	1	2
18	Accomplished less than you would like	1	2

19	Didn't do work or other activities as carefully as usual	1	2
----	---	---	---

20. 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?

- 1 - Not at all
- 2 - Slightly
- 3 - Moderately
- 4 - Quite a bit
- 5 - Extremely

21. How much **bodily pain** have you had during the **past 4 weeks**?

- 1 - None
- 2 - Very mild
- 3 - Mild
- 4 - Moderate

5 - Severe

6 - Very severe

22. During **the past 4 weeks**, how much did **pain** interfere with your normal work? (Including both work outside the home and housework)?

1 - Not at all

2 - A little bit

3 - Moderately

4 - Quite a bit

5 – Extremely

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**...

		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
23	Did you feel full of pep?	1	2	3	4	5	6
24	Have you been a very nervous person?	1	2	3	4	5	6
25	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
26	Have you felt calm and peaceful?	1	2	3	4	5	6
27	Did you have a lot of energy?	1	2	3	4	5	6
28	Have you felt downhearted and blue?	1	2	3	4	5	6
29	Did you feel worn out?	1	2	3	4	5	6
30	Have you been a happy person?	1	2	3	4	5	6
31	Did you feel tired?	1	2	3	4	5	6

32. 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.)?

- 1 - All of the time
- 2 - Most of the time

- 3 - Some of the time
- 4 - A little of the time
- 5 - None of the time

How **TRUE** or **FALSE** is each of the following statements for you.

		Definitely true	Mostly true	Don't know	Mostly false	Definitely false
33	I seem to get sick a little easier than other people	1	2	3	4	5
34	I am as healthy as anybody I know	1	2	3	4	5
35	I expect my health to get worse	1	2	3	4	5
36	My health is excellent	1	2	3	4	5

Annex III: Amharic Version Informed Consent

Addis Ababa University, School of Medicine, Department of Surgery, Vascular and Endovascular Surgery Unit.

ስሜ _____ እዚህ የመጣሁት ዶ/ር ያዳኒ ሚካኤልን ወክዬ አበባ ዩኒቨርሲቲ የቀዶ ሕክምና ክፍል፣ የደም ሥር እና የደም ቧንቧ ቀዶ ሕክምና ክፍል ተማሪ። "ከጤና ጋር የተገናኘ የህይወት ጥራት በደም ቧንቧ በሽታ" ላይ ጥናት እያካሄደች ነው። ከአዲስ አበባ ዩኒቨርሲቲ የሕክምና ትምህርት ቤት ፈቃድ አግኝታለች።

በዚህ ጥናት ላይ ለመሳተፍ ተመርጠዋል ምክንያቱም በአሁኑ ጊዜ ክትትል ላይ ስለሆኑ እና በምርምር ጊዜ የማካተት መስፈርቱን አሟልተዋል ። በዚህ ጥናት ላይ ያለዎት ተሳትፎ በእርስዎ ፍላጎት ላይ የተመሰረተ ብቻ ይሆናል። በዚህ ጥናት ውስጥ ላለመሳተፍ የመምረጥ መብት አልዎት። ለመሳተፍ ከመረጡ በማንኛውም ጊዜ ለማቆም መብት አልዎት። ለመሳተፍ ፈቃደኛ ከሆኑ ወይም እምቢ ካሉ ወይም በኋላ ለመውጣት ከወሰኑ ምንም አይነት በደል አይደርስብዎትም።

በጥናቱ ለመሳተፍ ከተስማሙ ክብደትዎ፣ ቁመትዎ፣ የቁርጭምጭሚቱ ብራቻይል መረጃ ጠቋሚ እና የእግር ጣት ግፊት ይለካሉ። እንዲሁም ስለ ሶሻል-ስነ-ሕዝብ ሁኔታ፣ ስለ መሰረታዊ ክሊኒካዊ መረጃ እና ከጤና ጋር የተገናኙ የህይወት ጥራት ጥያቄዎችን በተመለከተ ቃለ መጠይቅ ይደረግልዎታል። በቃለ መጠይቅ እና በመለኪያ ሂደት ውስጥ ምችት የማይሰማዎት ከሆነ በማንኛውም ጊዜ ማቆም ይችላሉ. መለኪያው እና መጠይቁን መሙላት 15 ደቂቃ ያህል ይወስዳል።

ይህ ጥናት በሽታው እና ህክምናው በህይወትዎ ጥራት ላይ ያለውን ተጽእኖ ለመገምገም እና እንደዚህ አይነት ችግር ላለባቸው ታካሚዎች የህይወት ጥራትን ለማሻሻል ፕሮቶኮልን ለመንደፍ ይረዳል. ያቀረቡት መረጃ ከድ ቁጥሮችን ብቻ በመጠቀም እና ውሂቡን በመቆለፍ በሚስጥር ይጠበቃል። ስምህ በመጠይቁ ላይ አይጻፍም። ከዋናው መርማሪ በስተቀር ማንም ሰው ከድ ያልሆነውን መረጃ ማግኘት አይችልም እና ውሂቡ ከጥናቱ ውጭ ለሌላ ዓላማዎች ጥቅም ላይ አይውልም። ለዚህ ጥናት ስኬት የእርስዎ ፍላጎት እና ንቁ ተሳትፎ በጣም አስፈላጊ ነው።

በመረጃ የተደገፈ ስምምነት እና/ወይም የመውጣት ቅጽ

ከላይ ባለው መረጃ መረዳት ላይ በመመስረት፣ በዚህ ጥናት ውስጥ ለመሳተፍ ፈቃደኛ ነዎት?

ሀ) አዎ

ለ) አይ

አዎ ከሆነ እቀጥላለሁ እና

አይደለም ከሆነ፣ የእምቢታ ምክንያቶችን ከጻፍኩ በኋላ ወደ ቀጣዩ ተሳታፊ እዘልላለሁ _____

ምላሽ ሰጪ

ፊርማ _____ ቀን _____

መረጃ ሰብሳቢ ስም _____

ፊርማ _____

መጠይቆች መታወቂያ ቁጥር _____

የተሰበሰበ መረጃ ቀን _____

የተሰበሰበ መረጃ ውጤት

ሀ) ተጠናቀቀ

ለ) አልተጠናቀቀም

ሐ) በከፊል የተጠናቀቀ

መ) እምቢ አለ።

በተቆጣጣሪ የተረጋገጠ፡ ስም _____ ፊርማ _____

ለበለጠ ማብራሪያ የዋናውን መርማሪ አድራሻ ተጠቀም፤

ስም፡ ዶ/ር ያዳኒ ሚካኤል

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Annex IV Amharic Version of Questionnaire

ከጤና ጋር ተያያዥ የሆኑ የኑሮ ደረጃን የሚዳስሱ ጥያቄዎች

ክፍል አንድ:- የማህበራዊ ሁኔታ የሚዳስሱ ጥያቄዎች		
ጥያቄ	Coding categories	Code
1. እድሜ	
2. ጾታ	1. ወንድ 2. ሴት	
3. የጋብቻ ሁኔታ	1. ያገባ/ች 4. የሞተበት/ባት 2. ያላገባ/ች 5. ሌላ ካለ..... 3. የፈታ/ች	
4. ሐይማኖት?	1. ኦርቶዶክስ 4. ካቶሊክ 2. ሙስሊም 5. ሌላ ካለ ይጥቀሱ..... 3. ፕሮቴስታንት	
5. የመኖሪያ ቦታ?	1. ከተማ 2. ገጠር	
6. የትምህርት ደረጃ	1. ማንበብ እና መፅሐፍ የማይችል/ት 2. ማንበብ እና መፅሐፍ የሚችል/ት 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ድጉሎች ወይም ከዚህ በላይ	
7. የሥራ ሁኔታ?	1. የግል ስራ 6. ሲራ የለለ 2. የመንግስት ሰራተኛ 7. ጠረታ የወጣ 3. ገበሬ 8. ሌላ ካለ _____ 4. የንግድ ስራ 5. መንግስታዊ ያልሆነ ስራ	
8. ወርሐዊ አማካይ የቤት ገቢ?	1. <10,000 2. 10,000-50000 3. >50,000	

Amharic Version of SF – 36 Questionnaires

1. ጠቅላል አድርገው፤ ሲመለከቱት የጤንነት ሁኔታ ምን ይመስላል?

- 1. እጅግ በጣም ጥሩ ነው
- 2. በጣም ጥሩ ነው
- 3. ጥሩ ነው
- 4. ለክፍ አይሰጥም
- 5. ሙጥፎ ነው

2. ከባለፈው አመት ጋር ሲያስተያየት የአሁኑ ጤና ሁኔታዎ እንዴት ይገለጻል?

- 1. ከአምና እጅግ በጣም ይሻላል
- 2. በተወሰነ መልኩ ይሻላል
- 3. ተመሳሳይ ነው/ለውጥ የለውም
- 4. በተወሰነ መልኩ ከአምና ብሶብኛል
- 5. ከአምና እጅግ በጣም ብሶብኛል

ከዚህ በታች ለተዘረዘሩት ጥያቄዎች በየቀኑ የሚያደርጓቸው ናቸው ተብሎ ይገመታል። የአሁኑ የጤና ሁኔታዎ/ሽ እነዚህን እንዳታደርጋ(ግያ)ቸው ይከለክላል? መልሱ አዎ ከሆነ፤ መጠኑን እንዴት ትገልጻለህ/ሽ?

		አዎ በጣም	በመጠኑ አቅቶኛ	አይ፣ ያቃተኝ
3	ከባድ ያሉ እንቁስቃሴዎች ለምሳሌ መሮጥ፣ከባድ እቃዎችን ማንሳትና ከባድ	1	2	3
4.	መጠነኛ ክብደት ያላቸውን እንቁስቃሴዎች ማድረግ ለምሳሌ፤ ጠረጴዛ/ወንበር/የቤት ቁሳቁስ/ ከቦታ ወደ ቦታ ማንቀሳቀስ እና ቀለል	1	2	3
5.	አነስ ያለ ክብደት ያላቸውን እቃ ማንሳት/መሸከም ለምሳሌ፤ አስቤዛዎችን ፤ ቀለል ያሉ የቤት እቃዎችን ከቦታ ወደ ቦታ ማንቀሳቀስ ያቅቶታል?	1	2	3
6.	ብዙ ደረጃዎችን መወጣት ወይም ተራራማ ቦታዎችን መወጣት ያቅቶታል?	1	2	3
7.	አንድ ደረጃ መወጣት ወይም አነስ ያሉ ክፍታዎች መወጣት ያቅቶታል?	1	2	3
8.	መታጠፍ፣መንበርከክ፣ማጎንበስ ያቅቶታል?	1	2	3
9.	ከሁለት ኪሎ ሜትር በላይ መራመድ	1	2	3
10.	ብዙ መንደሮችን በእግሮ መሄድ ያቅቶታል?	1	2	3

11.	ከአንድ መንደር ወደ ሌላ አንድ መንደር በእግሮ መሄድ ያቅቶታል?	1	2	3
12.	ራሱን ችለው ገላውትን መታጠብ ወይም ልብስ መልበስ ያቅቶታል?	1	2	3

ባለፉት 4 ሳምንታት ውስጥ ከዚህ በታች ከተዘረዘሩት ችግሮች ውስጥ፤ በአካላዊ ጤና ምክንያት በሥራዎ ወይም የየጸላት ተግባሮች ላይ ያጋጠሙ ችግሮች አሉ?

- 13. በስራ ወይም በሌላ እንቅስቃሴ የሚጠቀሙትን ሰዓት ሽራር፣ ጭነት/ቆራርጠዎል? 1. አዎ 2. አይደለም
- 14. መስራት ከሚፈልጉት በታች ነው ያከናውኑት? 1. አዎ 2. አይደለም
- 15. አንዳንድ ሥራዎችን እንዳይሰሩ ገድቦታል? 1. አዎ 2. አይደለም
- 16. ስራዎን መስራት ከብዶታል ወይም ተጨማሪ አቅም ጠይቆታል? 1. አዎ 2. አይደለም

ባለፉት 4 ሳምንታት ውስጥ በስነ-ልቦና ማለት ምን ዓይነት ችግሮች ወይም በብስጭት ምክንያት በስራ በታ አልያም በተለመደው ለተቀን እንቅስቃሴ ላይ ከነዚህ ውስጥ ያጋጠሙት ችግር አሉ?

- 17. በስራ ወይም በሌላ እንቅስቃሴ የምትጠቀሙትን ሰዓት ቆራርጠዎል? 1. አዎ 2. አይደለም
- 18. መስራት ከሚፈልጉት በታች ነው ያከናውኑት? 1. አዎ 2. አይደለም
- 19. ስራዎን እንደሌላ ግዜ በጥንቃቄ አልሰሩም? 1. አዎ 2. አይደለም

20. ባለፉት 4 ሳምንታት በምን ያህል የአካል ወይም የስነ-ልቦና ችግሮች በማህበራዊ እንቅስቃሴ ላይ ከቤተሰብ፣ ከጎደኛዎች፣ ከጎረቤቶች ወይም ከሌሎች ጋር ባሎት ግንኙነት ላይ ተጽኖ አሳድሮታል?

- 1. ምንም ተጽኖ አላሳደረብኝም
- 2. በትንሹ
- 3. በመጠኑ
- 4. በከፍተኛ ሁኔታ

5. በጣም በከፍተኛ ሁኔታ

21. ባለፉት 4 ሳምንታት ምን ያህል የሰውነት ህመም አጋጥሞታል?

- 1. ምንም አላጋጠመኝም
- 2. በጣም በትንሹ
- 3. በትንሹ
- 4. በመጠኑ
- 5. በከፍተኛ ሁኔታ
- 6. በጣም በከፍተኛ ሁኔታ

22. ባለፉት 4 ሳምንታት ታት ዉስጥ በሰውነት ዉስጥ የሚሰማዎ ህመም ሥራዎ ላይ ምን ያህል ተጽኖ ነበረዉ?

- 1. ምንም ተጽኖ አልነበረዉም
- 2. በትንሹ
- 3. በመጠኑ
- 4. በከፍተኛ ሁኔታ
- 5. በጣም በከፍተኛ ሁኔታ

ከዚ በታች የተዘረዘሩት ጥያቄዎች ባለፉት 4 ሳምንታት እንዴት ይሰማዎት እና ነገሮች እንደት እንደነበሩ የሚጠይቁ ናቸዉ። እባኩን ከታች ከተዘረዘሩት አማራጮች መካከል ከአርሶ ሁኔታ ጋር የሚቀራረበዉን አንዱን ይመልሱ ባለፉት 4 ሳምንታት ምን ያህል ጊዜ

ተ.	ጥያቄ	ሁል	በአብዛኛዉ	በተዎሰነ	አንዳንድ	በጣም	ትንሹ	በጭራሽ
		ጊዜ	ጊዜ	ጊዜ	ጊዜ	ጊዜ		
23.	ከመጠን ያለፈ/እጅግ ከፍ ያለ ደስታ ተሰምቶታል?	1	2	3	4	5		6
34.	ብስጭ ሆነዎ ታዉቃሉ?	1	2	3	4	5		6
24.	ምንም ነገር አይስደስተኝም ብለዉ የበታችኝነት ስሜት ተሰምቶታል?	1	2	3	4	5		6
26.	የተረጋጋና ሰላማዊ ስሜት ተሰምቶት ይዉቃል?	1	2	3	4	5		6
27.	ብዙ አቅም(ጉልበት) አሎት?	1	2	3	4	5		6
28.	ሀዘንና ጭንቀት/የመተከዝ ስሜት ተሰምቶት	1	2	3	4	5		6
29.	እንደሚይጠቅም ሰው ተሰምቶት ያዉቃል	1	2	3	4	5		6
30.	ደስተኛ ሰው ነበሩ?	1	2	3	4	5		6

31.	ድካም ተሰምቶት ያውቃል?	1	2	3	4	5	6
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32. ባለፉት 4 ሰዎች ታት ዉስጥ ምን ያህል ጊዜ የ አካላዊ ጤና ችግር ወይም የ ስነ-ልቦና መረብ ስህተት በማህበራዊ እንቅስቃሴዎች ላይ

ለምሳሌ በቤተሰብ፣ በዳይጃች፣ በጎረቤቶች እንደሁም ከሌሎች ጋር ያሉት ግኑኝነት ላይ ተጽኖ አድርጎታል?

- | | |
|--------------|--------------|
| 1. ሁል ጊዜ | 4. በጣም ብዙ ጊዜ |
| 2. በአብዛኛው ጊዜ | 5. በጭራሽ/ምንም |
| 3. አንዳንድ ጊዜ | |

ከዚህ በታች የተዘረዘሩት ጥያቄዎች ለእርስዎ ምን ያህል እውነት ወይንም ሃሰት ናቸው።

ተ.ቀ	ጥያቄ	በትክክል እውነት	በአብዛኛው እውነት	አላውቅም	በአብዛኛው ሃሰት	በትክክል ሃሰት
33.	ከሌላ ሰው ይልቅ በቀላሉ ለበሽታ ተጋላጭ ነኝ	1	2	3	4	5
34.	እንደማንኛውም ሰው ጤነኛ ነኝ	1	2	3	4	5
35.	የጤናዬ ሁኔታ እየተባባሰ እንደማሄድ እጠብቃለሁ	1	2	3	4	5
36.	ጤናዬ እጅግ በጣም ጥሩ ነው	1	2	3	4	5

መረጃ ሰብሳቢው ስም _____
 ፈርማ _____