



DEPARTMENT OF DERMATOVENEROLOGY

**QUALITY OF LIFE AMONG ADULT PATIENTS WITH
VITILIGO ATTENDING DERMATOVENEROLOGY OUTPATIENT
DEPARTMENT OF SPHMMC, ADDIS ABABA, ETHIOPIA, 2026.**

**A THESIS SUBMITTED TO THE DEPARTMENT OF
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REQUIREMENTS FOR THE CERTIFICATE OF SPECIALTY IN
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INVESTIGATOR: BIRHANU BEYESA(MD)

ADVISORS:

**HANAN SERGETA (MD, ASSISTANT PROFESSOR OF
DERMATOVENEROLOGY)**

KASIM MUHAMMED (ASSOCIATE PROFESSOR IN BIOSTATISTICS)

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Name of investigator	Birhanu Beyesa (MD)
Name of advisor	Hanan Sergeta (MD, Assistant Professor Of Dermatovenerology) Mr.Kasim Muhammed (Associate Professor In Biostatistics)
Full title of the Research Project	Quality of life among adult patients with vitiligo attending dermatovenerology outpatient department of SPHMMC, Addis Ababa, Ethiopia, 2026.
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Address of investigator	Email: birhanubeyesa@gmail.com Phone number +251957017141

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ABSTRACT

Background: Vitiligo is a chronic depigmenting skin disorder that is cosmetically and psychologically distressing, particularly in dark-skinned populations where cultural stigma is common. It is associated with significant impairment in quality of life, affecting social, occupational, and psychological well-being.

Objective: This study assessed the quality of life among adult patients with vitiligo attending the dermatology outpatient department at Saint Paul's Hospital Millennium Medical College (SPHMMC), Addis Ababa.

Methods: A hospital-based cross-sectional study was conducted among adult vitiligo patients (≥ 18 years). The sample size of 175 was determined using the single population proportion formula, assuming a 95% confidence level, 5% margin of error, and an expected prevalence of impaired dermatology life quality index from prior studies, with adjustment for finite population and non-response. Data were collected through face-to-face interviews using a structured, pretested questionnaire, which included socio-demographic variables, clinical characteristics, and the validated Amharic version of the Dermatology Life Quality Index (DLQI). Data were entered into Epi Info 7.1 and analyzed in SPSS version 26. Descriptive statistics summarized participant characteristics, and ordinal logistic regression identified predictors of DLQI impairment, with significance set at $p < 0.05$.

Results: Of the 175 patients enrolled, most were young, female, and urban residents. Psychosocial domains such as embarrassment and clothing were most affected, with over one-third reporting a very large or extremely large impact on quality of life. Regression analysis showed that younger age, female gender, single marital status, shorter disease duration, extensive body surface area involvement, and visible lesions were significant predictors of DLQI impairment.

Conclusion: Vitiligo significantly impairs quality of life, especially among younger, female, and single patients with extensive or visible disease. Psychosocial domains such as embarrassment, clothing, and social activities were most affected, underscoring the condition's emotional and social burden. Holistic care integrating medical treatment, counseling, and stigma-reduction strategies is essential to improve patient outcomes.

Keywords: Vitiligo; Quality of Life; Dermatology Life Quality Index (DLQI); Psychosocial Impact; Ordinal Logistic Regression; Saint Paul's Hospital Millennium Medical College; Addis Ababa

Table of Contents

ABSTRACT	III
1. INTRODUCTION.....	1
1.1 Background	1
1.2 Statement of the Problem	4
1.3 Significance of the Study.....	5
2. LITERATURE REVIEW.....	6
2.1 Burden of the Problem	6
2.2 Quality of Life in Vitiligo.....	7
2.3 Factors Contributing to Psychological Impact.....	8
2.4 Gap in Existing Research and Relevance to the Current Study.....	8
2.5 Tools to Assess Psychological Impact in Vitiligo.....	9
2.6 Conceptual Frame Work	10
3. OBJECTIVES	11
3.1 General Objective:	11
3.2 Specific Objectives:	11
4. METHODS AND MATERIALS.....	12
4.1 Study Area and Period	12
4.2 Study Design:	12
4.3 Population:.....	12
4.4 Eligibility Criteria	13
4.5 Sample Size Determination and Sampling Procedure.....	13
4.6 Study Variables	15
4.7 Operational Definitions.....	17

4.8 Data Collection Procedure	17
4.9 Data Quality Control	18
4.10 Data Analysis.....	19
4.11 Ethical Consideration	19
4.12 Result Dissemination Plan.....	20
5. RESULTS	21
6. DISCUSSION	26
7. REFERENCES.....	31
8. ANNEXES.....	35
Annex I. Information Sheet (English Version)	35
Annex II Consent Form (English Version)	36
Annex III Information Sheet (Amharic Version)	37
Annex IV Consent Form (Amharic Version).....	38
Annex V Questionnaires:	39

List of Figures

Figure 1. Clinical presentation of vitiligo.....	1
Figure 2: Conceptual Frame Work.....	11

List of Tables

Table 1: sample size calculation for associated factors	15
Table 2: Sociodemographic and Clinical Characteristics.....	22
Table 3: Distribution of Dermatology Life Quality Index (DLQI) Item	24
Table 4: Perceived Effect of Vitiligo on Patients.....	25
Table 5: Ordinal Regression Analysis of Significant Predictors of DLQI Impairment.....	29

Acronyms and Abbreviations

AOR.....	Adjusted Odd Ratio
BSA.....	Body Surface Area
CI.....	Confidence Interval
DLQI.....	Dermatology life Quality Index
EDVS.....	Ethiopian Dermatology and Venerology Society
HMIS.....	Health Management Information Systems
MDD.....	Major Depressive Disorder
MOH.....	Ministry of Health
OPD.....	Outpatient department
OR.....	Odd Ratio
Q1, Q2, Q3.....	Question one, two, three, ...
QoL.....	Quality of life
SPHMMC.....	Saint Paul's Hospital Millennium Medical College
VIS.....	Vitiligo Impact Scale
Vs.....	Versus

WHO.....World Health Organization

1. INTRODUCTION

1.1 Background

Vitiligo is a relatively common acquired depigmenting disorder characterized by the progressive loss of melanocytes. It is non-contagious, and while its exact etiology remains unclear, both genetic and environmental factors are implicated(1,2). Lesions may appear on the skin or mucous membranes, and the condition affects males and females equally, though women often seek medical care more frequently due to the greater social and cosmetic impacts(1,3).

Clinically, vitiligo is classified into generalized and localized types, with further subdivisions such as focal, segmental, mucosal, acrofacial, vulgaris, and universal forms. Mixed types also occur, and classification can be based on whether lesions cross the midline into non-segmental, segmental, or mixed categories.(1).



Figure 1. Clinical presentation of vitiligo. (Left: generalized vitiligo with widespread depigmented patches involving anterior and posterior lower limbs. Right: Acral vitiligo affecting the hands and fingers.)

Beyond its dermatological manifestations, vitiligo carries a significant disease burden. Patients often report impaired quality of life (QoL) and a willingness to pay for treatment(4). In African societies, the sharp contrast between depigmented and pigmented skin makes vitiligo particularly stigmatizing and cosmetically disfiguring(5). The burden of disease varies across populations depending on skin tone, cultural perceptions, societal stigma, healthcare access, and treatment availability(6). The disfiguring appearance of vitiligo can profoundly reduce QoL, especially in cultures where physical appearance holds high social value. Younger patients are particularly vulnerable, with impacts on daily activities, career opportunities, and interpersonal relationships(7).

Globally, a recent (2024) meta-analysis of 171 studies involving over 572 million participants estimated an overall prevalence of 0.40% (95% CI: 0.37–0.44) and an incidence of 1.59 per 10,000 person-years (95% CI: 0.70–2.83). Adults had higher prevalence (0.70%) than children (0.27%), with no sex difference. Regional variation was marked, ranging from 0.77% in West Asia to 0.12% in East Asia, with country-specific rates as high as 1.34% in Jordan and as low as 0.19% in Sweden. Importantly, examination-based studies showed prevalence rising from 0.40% in 1943–1979 to 0.89% in 2020–2023, suggesting a growing global burden.(8). Severity, facial involvement, and extensive body surface area (BSA) are consistent predictors of impaired QoL: severe disease carries a ~1.6-fold higher risk of impairment ($p=0.0004$), facial lesions increase odds of psychological distress by 1.3–1.5 times, and extensive BSA involvement is associated with 2–3 times higher odds of activity limitations.(9).

Across Africa, prevalence estimates range from 0.18% to 5.3%, with several studies reporting higher rates among women. Onset of age varies widely. However, most studies involve small samples and lack standardized methodology, underscoring the need for large, regionally adapted epidemiological research. African cohorts consistently demonstrate high QoL impairment: in Nigeria, 96.6% of patients reported impairment, with nearly 45% classified as severe; and women had significantly greater impairment than men ($RR \approx 1.5$). Higher socioeconomic and

educational levels doubled the odds of impairment ($OR \approx 2$), while stigma itself carried an $OR > 2$. In Tanzania, 24% reported a very large effect; patients were about twice as likely ($RR \approx 2$) to experience major impairment compared to controls, and adolescents and women had ~two-fold higher odds ($OR \approx 2$). Egyptian studies reported 42% experiencing a very large effect; vitiligo patients were nearly three times more likely ($RR \approx 3$) to have impaired QoL compared to controls. Subgroup analyses across African settings consistently show that younger age, female sex, darker phototypes, visible lesions, and family history increase odds of impairment by 2–3 times(10).

In East Africa, similar patterns emerge. A Tanzanian cohort of 88 patients (mean age 41 years, male/female ratio 1:1.7) reported 24% experiencing a very large effect. Clinically, 53.4% were graded severe, yet 79.5% perceived their disease as severe; greater BSA involvement doubled the risk ($RR \approx 2$) of perceiving disease as severe, and women had ~two-fold higher odds ($OR \approx 2$) of impaired QoL(11). In Sudan, a hospital-based study of 111 patients found 31% experienced psychological disturbances, with women again showing ~two-fold higher odds ($OR \approx 2$), and patients with extensive disease ($>10\%$ BSA) having ~two-fold higher risk ($RR \approx 2$) of morbidity compared to those with limited disease. These East African findings highlight that between one quarter and one third of vitiligo patients suffer severe psychosocial consequences, with risk consistently amplified by female sex, greater disease extent, and acute disease activity(12).

Although studies from Nigeria, Tanzania, Sudan, and Egypt have documented the heavy psychosocial burden of vitiligo, evidence from Ethiopia has been limited. Yet, hospital-based reports suggest that the condition may be even more common locally. At ALERT Hospital in Addis Ababa, vitiligo accounted for 2.8% of dermatology patients(3); in Bahir Dar, Tibebe Ghion Specialized and Addisalem Primary Hospitals reported a prevalence of 7.4%(13); and dermatology clinics in Mekelle city documented rates as high as 13.15%(14). These figures reveal that vitiligo is not only a visible skin disorder but a significant dermatologic burden in

Ethiopia, where treatment options remain scarce and cultural stigma is profound. Taken together with global and regional evidence, this underscores the urgent need for locally grounded research to capture the true impact of vitiligo on quality of life and to guide holistic, culturally sensitive care strategies for Ethiopian patients.

1.2 Statement of the Problem

Vitiligo is a chronic, non-lethal skin disorder that causes no direct organic harm, yet its visible and progressive nature exerts a profound psychosocial burden. The sudden appearance of depigmented patches often triggers anxiety, loss of self-confidence, depression, and social withdrawal. Because skin color is central to body image, any pathological change can diminish self-esteem and isolate affected individuals from society. Thus, vitiligo significantly impairs health-related quality of life (QoL).^(7,15,16).

In sub-Saharan Africa, this burden is intensified by darker skin phenotypes, cultural stigma, and widespread misconceptions about the disease. Patients frequently experience embarrassment, paranoia, sleep disturbances, and strained intimate or marital relationships, with some reports even citing divorce linked to depigmentation. The impact extends beyond emotional health to social interactions and employment opportunities, underscoring that vitiligo must be addressed not only as a dermatological disorder but also as a psychosocial condition.^(7,17,18).

While studies from Egypt, Nigeria⁽⁶⁾, Tanzania⁽¹¹⁾ and Sudan⁽¹²⁾ have documented high rates of QoL impairment, there remains a paucity of research evaluating QoL among vitiligo patients in Ethiopia. Hospital-based studies in Addis Ababa, Bahir Dar, and Mekelle report vitiligo prevalence ranging from 2.8% to 13.15%^(3,13,14), demonstrating that vitiligo is a significant dermatologic burden in Ethiopia. However, despite these prevalence data, no study has systematically assessed the quality-of-life impact of vitiligo in Ethiopian patients.

This gap is critical. Without QoL data, the true psychosocial consequences of vitiligo remain invisible to clinicians, policymakers, and the health system. Patients continue to face stigma and limited treatment options without evidence-based support. Therefore, the motivation for this study is to address this gap by evaluating the QoL among adult vitiligo patients attending the dermatology OPD of SPHMMC. The findings will provide locally relevant evidence to guide holistic care strategies and inform future management guidelines tailored to the Ethiopian context.

1.3 Significance of the Study

Vitiligo has a special significance to patients in our country because depigmentation is obvious on dark skin and more importantly due to the enormous stigma that the disease carries. Vitiligo is a common disease with wide range of treatment modality worldwide. But in Ethiopia, little is known about the exact prevalence of the disease and only few treatment options are accessible and affordable(13). Vitiligo reduces the patients' beauty and has deep effects on their private and social life, and causes social malfunction and decreases their quality of life. This illness lowers their self-esteem and may cause shame in social interactions(19). Assessing QOL and its prevalence among adult vitiligo patients is essential for improving patients care and developing targeted interventions that address the broader impacts of the condition. This study is particularly important for several reasons:

- ✓ By quantifying the quality of life, the study will highlight the need for psychosocial support as part of routine dermatologic care for vitiligo patients.
- ✓ The findings from this research can help healthcare providers develop a more holistic approach to managing vitiligo, focusing not only on the physical treatment of the condition but also on the mental health challenges faced by patients.
- ✓ This research will also inform SPHMMC, policy makers and MoH to avail different types of medication and treatment modality in our setup.
- ✓ This study, being one of the few investigations into QoL among vitiligo patients in Ethiopia, will provide valuable baseline data for SPHMMC and establish a reference point for future research.

2. LITERATURE REVIEW

Healthy skin is essential for physical and psychological well-being, as it is the most visible organ of the body. Alterations in skin appearance can significantly affect self-image, and pathological changes often have psychological consequences. Vitiligo is therefore an important dermatological condition, not only due to its clinical manifestations but also because of its profound impact on patients' quality of life (QoL)(20). Importantly, patient-assessed severity does not always correspond with physician-assessed severity, and psychological effects such as low self-esteem, adjustment disorders, anxiety, and depression are strongly correlated with impaired QoL. These effects are more pronounced in individuals with darker skin due to the stark contrast between affected and unaffected areas(20).

2.1 Burden of the Problem

Vitiligo is increasingly recognized as a global public health concern. A recent meta-analysis (2024), pooling data from 171 studies and more than 572 million adults, estimated an incidence of 1.59 per 10,000 person-years (95% CI: 0.70–2.83) and an overall prevalence of 0.40% (95% CI: 0.37–0.44), with no significant difference between females (0.50%) and males (0.49%)(8). Regional studies (2024), however, reveal marked variation: prevalence has been reported to range from 0.18% to 5.3% in Africa and the Middle East, compared to 0.04% to 0.57% in Latin America(6), reflecting both epidemiologic diversity and the influence of cultural stigma. Strikingly, within Ethiopia, a hospital-based study conducted in Bahir Dar (2024) reported a prevalence of 7.4% among dermatology patients(13), a figure substantially higher than both global and regional estimates. This elevated burden underscores the importance of considering local epidemiology, where sociocultural perceptions and stigma may intensify the impact of vitiligo. Taken together, these findings highlight not only the global scale of vitiligo but also its regional heterogeneity, with Ethiopia presenting one of the highest reported burdens in Africa and warranting closer public health and clinical attention. Beyond prevalence, the burden of vitiligo is most clearly reflected in its impact on patients' quality of life, where psychosocial

domains such as stigma, social participation, and personal relationships often outweigh clinical severity, making QoL assessment an essential complement to epidemiologic data.

2.2 Quality of Life in Vitiligo

Although vitiligo is generally asymptomatic, it profoundly affects patients' quality of life. Visible lesions often lead to stigmatization, low self-esteem, and social isolation, with daily living compromised by embarrassment and altered social participation(21). In many societies, women with vitiligo face particular challenges in marriage, education, and employment opportunities(22).

Studies using the Dermatology Life Quality Index (DLQI) report scores ranging from 4.82 to 14.72, frequently worse than psoriasis in domains such as feelings, clothing, social, and leisure activities(23). Systematic reviews confirm wide global variation, with DLQI scores ranging from 1.82 to 15.0, showing the least impairment in Europe and North America and the greatest in Middle Eastern and Asian countries(17).

Cultural beliefs further exacerbate stigma; for example, in India vitiligo has been linked to religious interpretations, resulting in severe social consequences, particularly for young unmarried women(24). African data also highlight significant burden: a South African study of 95 patients reported a mean DLQI score of 10.06 ± 6.5 , indicating moderate impairment. Embarrassment, itching, and pain were common complaints, with higher scores observed among younger patients, women, unemployed individuals, and those with generalized vitiligo, although body surface area involvement was not significantly correlated with DLQI scores(25).

2.3 Factors Contributing to Psychological Impact

The psychological impact of vitiligo is closely tied to quality of life, with several factors consistently associated with higher psychosocial burden. Female sex, younger age (particularly <30 years), extensive body surface area involvement, and lesions located on visible sites such as the face and hands or sensitive areas such as the genitalia are strongly linked to greater impairment(26). Darker skin types experience more pronounced psychosocial effects due to the sharp contrast in pigmentation, while patients with longer disease duration (>10 years) sometimes report improved quality of life, possibly reflecting gradual acceptance of the condition(7). Comparative studies show that vitiligo patients consistently report greater psychosocial burden than those with acne or alopecia areata, underscoring the unique visibility and stigma of the disease. Recent systematic reviews (2022) further confirm strong associations with anxiety, depression, and social withdrawal, emphasizing the distinctive psychosocial weight of vitiligo compared to other dermatological disorders(27). Beyond clinical severity, cultural and social factors amplify this burden (2023): stigma, marital strain, and negative cultural interpretations have been highlighted as key contributors, particularly in societies where visible skin disease carries symbolic or social meaning(28). Taken together, these findings demonstrate that the psychological impact of vitiligo arises not only from its clinical manifestations but also from the interplay of cultural beliefs, social exclusion, and challenges to personal identity, making psychosocial assessment and support integral to comprehensive patient care.

2.4 Gap in Existing Research and Relevance to the Current Study

Most existing studies on vitiligo have concentrated on clinical treatment and disease patterns, while largely neglecting the mental health implications and psychosocial burden of the condition. In Ethiopia, recent investigations have reported prevalence estimates ranging from 2.8% at ALERT Hospital (2021) to 7.4% in Bahir Dar (2024), with some dermatology cohorts documenting rates as high as 13.15%(3,14,29). Despite these notable figures, none of these studies systematically assessed quality of life, leaving a critical gap in understanding the

psychosocial impact of vitiligo within the Ethiopian context. This absence of QoL data is particularly striking given the comparatively high prevalence observed locally, and it limits the development of culturally sensitive care strategies that address both physical and psychological needs. While international studies provide substantial evidence on the psychosocial consequences of vitiligo, Ethiopian data remain scarce, particularly within dermatology outpatient settings. Addressing this gap, the present study explores the psychological impact of vitiligo among adult patients attending the dermatology outpatient department of Saint Paul's Hospital Millennium Medical College (SPHMMC) in Addis Ababa. Findings are expected to contribute to integrative care models that consider not only clinical management but also the broader psychosocial well-being of patients.

2.5 Tools to Assess Psychological Impact in Vitiligo

The Dermatology Life Quality Index (DLQI) is the most widely used instrument for assessing quality of life in dermatology, including the psychological and social impact of vitiligo. It consists of 10 questions, each scored from 0 to 3, with higher scores indicating greater impairment(30–32). The DLQI is brief, simple, and self-explanatory, typically requiring only 1–2 minutes to complete, which makes it practical for both clinical and research settings. Its validity and reliability are well established(33,34), and recent validation studies (2022–2024) have reaffirmed its robustness across diverse populations, including vitiligo patients, further strengthening its role as a standard measure of dermatology-related quality of life. Comparative analyses have also highlighted its advantages over other instruments, demonstrating consistent sensitivity in capturing psychosocial domains such as stigma, social participation, and emotional well-being(9,35). For this study, the (2025) validated Amharic version of the DLQI(36) will be employed, ensuring cultural and linguistic appropriateness for Ethiopian patients. These features underscore DLQI's utility not only in quantifying impairment but also in guiding patient-centered care and informing integrative management strategies.

2.6 Conceptual Frame Work

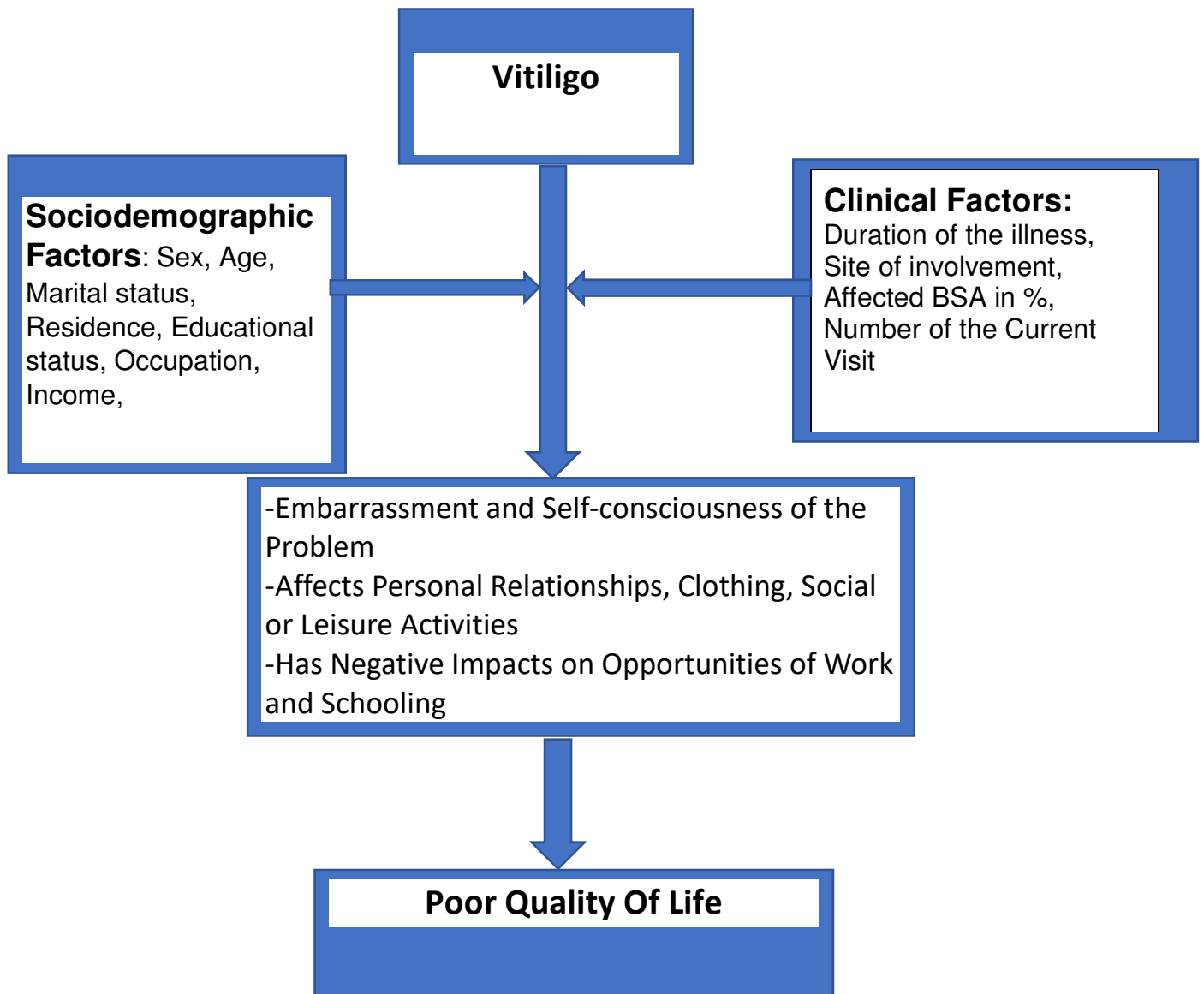


Figure 2. Conceptual Framework: Impact of Sociodemographic and Clinical Factors on QOL Among Adult Vitiligo Patients Attending Dermatovenereology OPD of SPHMMC During the Study Period of March to November 2025.

3. OBJECTIVES

3.1 General Objective:

- ✓ To assess the dermatology-related quality of life among adult patients with vitiligo attending SPHMMC dermatology OPD during the study period of March 2025 – November 2025.

3.2 Specific Objectives:

- ✓ To determine the prevalence and severity of impaired quality of life among adult vitiligo patients using the Amharic version of the Dermatology Life Quality Index (DLQI).
- ✓ To identify sociodemographic and clinical factors associated with impaired quality of life among adult vitiligo patients during the study period.

4. METHODS AND MATERIALS

4.1 Study Area and Period

The study was conducted at St. Paul's Hospital Millennium Medical College which is one of the second largest specialized tertiary referral hospitals in the country, located in Addis Ababa, Gullele Sub City. It was established in 1969 by Emperor Haile Selassie I whereas the medical college was established in 2007. The hospital currently provides a wide range of services in the various departments and has more than 4000 clinical, academic and administrative and support staffs. While the inpatient capacity is more than 700 beds, the college sees an average of 1200 emergency and outpatient clients daily. Dermatovenerology department is one of among the various departments, which provide a wide range of services in dermatology out patient's clinic. The Dermatology clinic sees an average of 50-70 outpatient clients daily. There are 11 Dermatovenerologists, 6 nurses and 21 Dermatovenerology residents. This study was conducted from March 2025 – November 2025.

4.2 Study Design:

Hospital based cross sectional study was conducted among adult vitiligo patients attending SPHMMC dermatology OPD.

4.3 Population:

4.3.1 Source Population

All patients with vitiligo who visited SPHMMC during the study period.

4.3.2 Study Population

All vitiligo patients who visited the dermatology clinic at SPHMMC and fulfilled the inclusion criteria during the study period.

4.3.3 Study Participants

All every other adult vitiligo patients who visited SPHMMC dermatology outpatient department and fulfilled inclusion criteria were selected during the study period.

4.4 Eligibility Criteria

4.4.1 Inclusion Criteria

All vitiligo patients attended dermatology outpatient department of SPHMMC during the study period, whose Age was ≥ 18 years.

4.4.2 Exclusion Criteria

- ✓ Patients having other concomitant skin disease other than vitiligo
- ✓ Patients with psychotic disorders
- ✓ Foreigners (non-Ethiopians)

4.5 Sample Size Determination and Sampling Procedure

4.5.1 Sample Size Determination

The initial sample size(n) was calculated using the single population proportion formula for cross-sectional studies, based on the following assumptions:

$$\text{Sample size (n)} = \frac{(Z_{\alpha/2})^2 \cdot p(1-p)}{d^2} = 384.$$

Where: **n** = the desired sample size

$Z_{\alpha/2}$ = Z-value for a 95% confidence level which is **1.96**

P = the expected proportion of adult vitiligo patients with poor quality of life. In the absence of Ethiopian data, a prevalence of **50% (P = 0.50)** was adopted from a previous institutional study in Sudan (2025) (37), reflecting regional similarity (East Africa).

d = the marginal error tolerated degree of confidence (5%=0.05)

According to OPD HMIS records, approximately 270 adult vitiligo patients attended the dermatology outpatient department in the preceding 9 months. This figure was used only to estimate the source population size for finite population correction in the sample size calculation. Since this number is less than 10,000, correctional formula is used:

$$nf = \frac{no}{1 + \frac{no}{N}} \quad \text{Where,}$$

nf= final sample size

no = initial sample size which is 384

N = total study population (270). After applying the population correction formula, the final sample size (nf) was 159.

Table 1: Sample Size Calculation for Associated Factors Using Epi-Info StatCalc for selected potential variables:

Variable (Exposure)	Assumption OR	P (Proportion)	Ratio	Power	CI (95%)	Sample Size	Reference
Age (21–30 yrs)	5.8	23.5%	1	80%	95%	132	[35]
Single	8.6	31.2%	1	80%	95%	80	[35]
Monthly income < 5,000 SR	9.6	33.8%	1	80%	95%	72	[35]

OR = odd ratio; P = proportion; CI = confidence interval; SR = saudi riyal; yrs = years

Since the largest of all the calculated sample size was 159, 10% was added for non-respondent and **175 was used as the final sample size.**

4.5.2. Sampling Procedure

Systematic random sampling was employed to select representative sample participants from patients attending the study area during the study period. An average of 270 adult vitiligo patients visited dermatology OPD in the last 09 months period. The sample size calculated is 175, so the sampling fraction (k) was $270/175 = 1.54 \sim 2$. The first patient to be included in the sample was chosen by lottery method (random start) and then every 2nd patient was included in the sample.

4.6 Study Variables

4.6.1 Dependent Variable

- **Quality of life:** The total DLQI score is classified into five levels which is adopted from similar study of Saud Arabia(17):
 - ✓ 0-1= no effect
 - ✓ 2-5= small effect
 - ✓ 6-10= moderate effect
 - ✓ 11-20= very large effect and
 - ✓ 21-30= extremely large effect

Descriptive statistics were used to summarize distributions, and chi-square tests were applied to explore bivariate associations between these independent variables and the dependent variable (DLQI categories). To identify significant predictors of higher levels of quality-of-life impairment, **ordinal regression analysis** was employed. This method was chosen because the DLQI outcome is ordered, allowing us to estimate the likelihood of patients reporting progressively worse QoL categories in relation to specific socio-demographic and clinical factors.

4.6.2 Independent Variables

The independent variables were chosen based on prior studies of vitiligo and quality of life, as well as the conceptual framework guiding this research. Evidence shows that both socio-demographic factors and clinical characteristics influence the psychosocial burden of vitiligo. These variables also align with the domains of the Dermatology Life Quality Index (DLQI), which captures functional, emotional, and social impacts of skin disease. Accordingly, the following categorical variables were analyzed:

Socio-demographic factors included:

- **Age:** Young adults (18–24 years), middle adulthood (25–44 years), older adulthood (≥ 45 years)
- **Sex:** Male, female
- **Residence:** Urban, rural
- **Educational status:** No formal education, primary, secondary/preparatory, diploma and above
- **Marital status:** Single, married, divorced or widowed
- **Occupation:** Student, civil servant, business owner, housewife, unskilled laborer, others
- **Estimated monthly income:** <5104 ETB, 5104–10600 ETB, 10600–21491 ETB, >21491 ETB

Clinical factors included:

- **Site of the lesion:** Exposed only, unexposed only, both
- **Percentage of body surface area (BSA) involved:** $\leq 10\%$, 10–30%, $> 30\%$
- **Duration of illness:** Below 1 year, 1–5 years, > 5 years
- **Number of current visits:** New visit, 2nd visit, 3rd visit, ≥ 4 th visit

4.7 Operational Definitions

The diagnosis of vitiligo was made clinically after being thoroughly evaluated by two senior Dermatovenerology residents. In cases of disagreement, a dermatovenerologist provided the final clinical confirmation.

Vitiligo: is defined as the well circumscribed de-pigmented skin disorder, characterized by milky white patches/macules of different sizes and shapes in the absence of inflammation, textural changes or scaling and is surrounded by normal skin(2).

Quality of life: defined by the WHO as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is an all-inclusive concept that encompasses the physical, social, occupational and psychological well-being of an individual(38). DLQI questionnaire will be used to assess the patient's perception of the impact of skin diseases on various aspects of their health-related quality of life over the last week. The questionnaire consists of 10 questions, with each question scoring from zero to three.

4.8 Data Collection Procedure

Data was collected by face-to-face interview using structured questionnaires after clearly explaining and taking written consent from patients that fulfil inclusion criteria. The questionnaire paper consists of four sections:

- A) Informed consent
- B) socio-demographic characteristics: which include Age, Gender, Residence, Marital status, Educational level, Occupation and Income
- C) Disease information: which includes duration of the illness, site of skin involvement, estimated involved BSA and number of current visit
- D) The 10 DLQI questions.

Quality of life measurement tool

The validated Amharic version of the Dermatology Life Quality Index (DLQI) was used to assess patients' perceptions of how vitiligo affected various aspects of their health-related quality of life during the previous week(36), and was scored and coded as described under the dependent variable.

4.9 Data Quality Control

Prior to data collection, two data collectors received a full day of training, conducted one week in advance. The training emphasized proper data collection procedures, obtaining informed consent, respectful participant engagement, and adherence to ethical standards. To ensure accuracy, the validated Amharic version of the DLQI questionnaire was employed, with the English version serving as a checklist. Interviewers used this checklist during each interview to confirm that all sections were completed.

The questionnaire was pretested on 5% of the sample size among randomly selected individuals from ALERT Hospital, who were excluded from the main study. The pretest evaluated clarity, response accuracy, estimated completion time, and potential challenges, and adjustments were made based on the findings. During the actual study, data were submitted daily to the principal investigator, who reviewed them for completeness, corrected inconsistencies promptly, and assigned unique codes to each participant to facilitate tracking and prevent duplication.

These procedures collectively safeguarded the quality of the data, ensuring that the information obtained was reliable, valid, and fit for rigorous analysis.

4.10 Data Analysis

Completed questionnaires were checked for missing values, inconsistencies, and duplicate entries. Data were then coded (e.g., categorical variables assigned numeric codes) and entered into Epi Info version 7.1, which was used as a structured data entry platform to minimize errors. The cleaned dataset was subsequently exported to SPSS version 26 for statistical analysis. The Dermatology Life Quality Index (DLQI) was categorized as: 0–1 = no effect, 2–5 = small effect, 6–10 = moderate effect, 11–20 = very large effect, and 21–30 = extremely large effect.

Descriptive statistics were used to summarize categorical variables. To identify predictors of DLQI impairment, ordinal logistic regression was applied, as the dependent variable was ordinal in nature. Model fit was evaluated by comparing the intercept-only and final models, with a significant reduction in -2 Log Likelihood ($\Delta\chi^2 = 141.917$, $df = 27$, $p < .001$) confirming that predictors improved explanatory power. Goodness of fit was assessed using Pearson and Deviance chi-square tests; while the Pearson statistic was marginally significant ($p = .037$), the non-significant Deviance result ($p = 1.000$) indicated adequate model fit. Pseudo R^2 values (Cox & Snell = .556, Nagelkerke = .584, McFadden = .268) suggested moderate to strong explanatory strength. Finally, the test of parallel lines was non-significant ($p = .454$), confirming that the proportional odds assumption was met and validating the use of ordinal logistic regression.

Associations between sociodemographic and clinical predictors and DLQI categories were expressed as adjusted odds ratios (AOR) with 95% confidence intervals. Statistical significance was set at $p < 0.05$.

4.11 Ethical Consideration

The study was conducted at St. Paul's Hospital Millennium Medical College after ethical approval was obtained from Institutional Review Board of SPHMMC. Written informed consent was obtained after the objective of the study, the benefits and risks of the study was explained for the study participants. Respondents had the right to withdraw from the study or not to participate at all. The information collected from the study participants have been kept confidential and used

only for the study purpose. To keep the confidentiality no personal identifiers were used on the data collection format.

4.12 Result Dissemination Plan

Once completed, the findings of this study will be presented to the Dermatovenerology Department of Saint Paul's Hospital Millennium Medical College (SPHMMC) during the thesis defence. The results will also be shared with the School of Public Health, the Ministry of Health (MOH), and the Ethiopian Dermatology and Venerology Society (EDVS) to inform practice and policy. Beyond institutional submission, efforts will be made to present the study at scientific conferences and to publish in peer-reviewed journals, ensuring that the evidence generated contributes to the wider scientific community. In this way, the dissemination of results will extend the impact of the research beyond academic requirements, supporting both patient care and future scholarship.

5. RESULTS

This study enrolled a total of 175 adult patients with vitiligo who attended the dermatology outpatient department at SPHMMC. The results are presented in three main parts:

- (1) sociodemographic and clinical characteristics of the study population
 - (2) Dermatology Life Quality Index (DLQI) item-level scores and perceived impact categories
 - (3) predictors of quality of life impairment identified through ordinal logistic regression analysis.
- The findings highlight both the clinical profile of patients and the substantial psychosocial burden associated with vitiligo.

Among the 175 adult vitiligo patients, the largest age group was 18–24 years (52.6%), while the smallest was ≥ 45 years (20%). Females made up 56.6% of participants, and most lived in urban areas (70.9%). Married individuals were the majority (56%), whereas divorced or widowed patients were the least (9.1%). Educational attainment was highest among those with diploma and above (36.6%) and lowest among those with no formal education (6.9%). Students were the most common occupational group (21.7%), while “others” accounted for the smallest share (5.7%). In terms of income, most earned below 5104 ETB (60.6%), while only 4% reported more than 21,491 ETB.

More than half had disease duration under one year (53.7%), while the smallest group had illness for over five years (20%). Lesions involving both exposed and unexposed sites were most frequent (55.4%), whereas unexposed-only involvement was least common (20.6%). The majority had <10% body surface area affected (61.7%), compared to 14.9% with >30% involvement. Nearly half were first-time visitors (43.4%), while only 5.1% had four or more visits.

Table 2. Sociodemographic and Clinical Characteristics of Adult Patients with Vitiligo Attending the Dermatology OPD at SPHMMC, Addis Ababa, Ethiopia (March–November 2025) (n = 175)

Variable	Category	Counts (%)
Age (years)	18-24	92 (52.6)
	25–44	48 (27.4)
	≥45	35 (20.0)
Gender	Female	99 (56.6)
	Male	76 (43.4)
Residence	Urban	124 (70.9)
	Rural	51 (29.1)
Marital status	Single	61 (34.9)
	Married	98 (56.0)
	Divorced or Widowed	16 (9.1)
Educational level	Primary	60 (34.3)
	Secondary	39 (22.3)
	Diploma and above	64 (36.6)
	No formal education	12 (6.9)
Occupation	Student	38 (21.7)
	Civil servant	37 (21.1)
	Business owner	24 (13.7)
	Farmer	14 (8.0)
	Housewife	21 (12.0)
	Unskilled laborer	31 (17.7)
	Others	10 (5.7)
Estimated monthly income (ETB)	<5104	106 (60.6)
	5104–10600	46 (26.3)
	10600–21491	16 (9.1)
	>21491	7 (4.0)
Duration of illness	<1 year	94 (53.7)
	1–5 years	46 (26.3)
	>5 years	35 (20.0)
Site of involvement	Exposed only	42 (24.0)
	Unexposed only (reference)	36 (20.6)
	Both exposed & unexposed	97 (55.4)
Estimated involved BSA	<10%	108 (61.7)
	10–30%	41 (23.4)
	>30%	26(14.9)
Number of current visits	1st	76 (43.4)
	2nd	55 (31.4)
	3rd	35 (20.0)
	≥4th	9 (5.1)

Among the ten DLQI items, embarrassment (57.1%) and clothing choice (56.6%) were the most frequently reported areas of quality-of-life impairment. Work and study (38.9%) and social activities (32.6%) also showed notable impact. In contrast, the least affected domains were symptoms (9.9%), sexual difficulties (9.9%).

Table 3. Distribution of Dermatology Life Quality Index (DLQI) Item Scores and Percentages Among Adult Patients with Vitiligo Attending the Dermatology OPD at SPHMMC, Addis Ababa, Ethiopia (March–November 2025) (n = 175)

DLQI Item	Total Score	Percentage (%)
Q1 (Symptoms)	52	9.9
Q2 (Embarrassment)	300	57.1
Q3 (Shopping & Home Care)	145	27.6
Q4 (Clothing)	297	56.6
Q5 (Social Activities)	171	32.6
Q6 (Sports)	107	20.4
Q7 (Work and Study)	204	38.9
Q8 (Relationship Problems)	146	27.8
Q9 (Sexual Difficulties)	52	9.9
Q10 (Treatment)	80	15.2

Out of 175 patients, the largest proportion reported a moderate effect on quality of life (29.7%), followed closely by a very large effect (25.7%). A smaller share experienced only a small effect (21.7%), while 16.6% reported no effect at all. The least frequent category was extremely large effect, observed in 6.3% of patients.

Table 4. Perceived Impact of Vitiligo on Daily Life (DLQI Overall Effect) Among Adult Patients Attending the Dermatology OPD at SPHMMC, Addis Ababa, Ethiopia (March–November 2025) (n = 175)

Perceived DLQI Effect	Frequency(n)	Percentage (%)
No effect	29	16.6
Small effect	38	21.7
Moderate effect	52	29.7
Very large effect	45	25.7
Extremely large effect	11	6.3
Total	175	100.0

Result of Ordinal Logistic Regression Analysis: Ordinal logistic regression was conducted to identify predictors of DLQI impairment among adult vitiligo patients. The full model significantly improved over the intercept-only model ($\chi^2 = 139.644$, $df = 24$, $p < .001$), indicating that the predictors added meaningful explanatory power. Goodness-of-fit statistics showed adequate fit (Pearson $p = .165$; Deviance $p = 1.000$), and the proportional odds assumption was satisfied (Test of Parallel Lines, $p = .138$), confirming the appropriateness of the proportional odds model. Pseudo R^2 values (Nagelkerke = .578) suggested moderate explanatory strength of the model.

As presented in **Table 5**, the ordinal logistic regression analysis identified several independent significant predictors of higher DLQI categories, reflecting greater impairment in dermatology-related quality of life.

- **Age:** Patients aged 18–24 years had higher odds of reporting worse QoL categories compared to those aged ≥ 45 years (AOR = 4.01, 95% CI: 1.62–9.91, $p = .003$).
- **Gender:** Female patients were more likely than males to fall into higher DLQI categories (AOR = 2.57, 95% CI: 1.26–5.27, $p = .010$).
- **Marital status:** Single patients had higher odds of being in worse QoL categories compared to married individuals (AOR = 5.39, 95% CI: 2.46–11.8, $p < .001$).
- **Duration of illness:** Patients with disease duration less than one year had increased odds of higher QoL impairment compared to those with illness lasting over five years (AOR = 3.52, 95% CI: 1.49–8.34, $p = .004$).
- **Extent of disease:** Patients with body surface area involvement greater than 30% had higher odds of being in worse DLQI categories compared to those with less than 10% involvement (AOR = 4.71, 95% CI: 1.67–13.3, $p = .003$).
- **Site of involvement:** Patients with lesions affecting both exposed and unexposed areas had higher odds of reporting greater QoL impairment compared to those with unexposed sites only (AOR = 5.03, 95% CI: 2.23–11.3, $p < .001$).

These findings indicate that both socio-demographic and clinical factors significantly influence the likelihood of patients reporting higher DLQI categories (moderate, very large, or extremely large effect).

Other variables, including **residence, education, occupation, and monthly income**, were not significantly associated with DLQI categories in the final model.

Table 5. Significant Predictors of Dermatology Life Quality Index (DLQI) Impairment Identified by Ordinal Logistic Regression Among Adult Vitiligo Patients Attending the Dermatology OPD at SSPHMMC, Addis Ababa, Ethiopia (March–November 2025) (n = 175)

Predictor	Category vs Reference	Adjusted OR (95% CI)	p-value
Age(years)	18-24 vs >45	4.01 (1.62 – 9.91)	.003
Gender	Female vs Male	2.57 (1.26 – 5.27)	.010
Marital status	Single vs Married	5.39 (2.46 – 11.8)	.000
Duration of illness	<1-year vs >5 years	3.52 (1.49 – 8.34)	.004
BSA category	>30% vs <10%	4.71 (1.67 – 13.3)	.003
Site involvement	Both exposed & unexposed vs Unexposed only	5.03 (2.23 – 11.3)	.000

6. DISCUSSION

6.1 Key Findings

This study demonstrated that vitiligo imposes a substantial psychosocial burden on Ethiopian adults. Embarrassment, clothing choice, and social activities were the most affected domains of the Dermatology Life Quality Index (DLQI). More than one-third of patients reported very large or extremely large impairment, underscoring the profound impact of the disease. Ordinal logistic regression analysis identified younger age, female gender, single marital status, shorter disease duration, extensive body surface area (BSA) involvement, and visible lesion distribution as the strongest predictors of impaired quality of life. These findings highlight that vitiligo affects patients not only physically but also socially and psychologically, with stigma and cultural misconceptions amplifying its burden in Ethiopia.

6.2 Comparison with Previous Literature

Regional evidence: Our results align closely with African studies. Nigerian research reported that 96.6% of patients had impaired QoL, with severe impairment in 44.8% of cases, and visible lesions increased odds of severe impairment by 2–3 times(39). Another Nigerian study found female sex and single marital status significantly associated with greater impairment, consistent with our finding that women had more than twice the odds (AOR = 2.57) and single patients had fivefold higher odds (AOR = 5.39). (40). Egyptian studies similarly reported that 42% of patients experienced a very large effect on QoL, with younger, female, and visibly affected patients having 2–3 times higher odds of severe impairment(6)

In Sudan, a hospital-based study was conducted at Khartoum Dermatologic Hospital and found that 31% of adult vitiligo patients experienced psychological disturbances, with 17.5% reporting mild and 13.5% severe distress. Importantly, psychological consequences were more common in the acute stages of disease, and distress tended to increase with greater body surface area involvement. Although statistical correlations were not strong, the study emphasized that

vitiligo's psychosocial burden is substantial in Sudanese patients, particularly due to stigma and cultural misconceptions(41). These findings resonate with our Ethiopian data, where shorter disease duration and visible lesions were strong predictors of impairment, suggesting that early disease stages may be especially distressing in African populations. Collectively, African evidence reinforces our results, particularly the role of stigma, visibility of lesions, and demographic factors such as age and gender.

Global evidence: Global evidence: Our findings are also consistent with global studies. A large survey demonstrated that patients with affected BSA greater than 25% had more than twice the odds of reporting worse DLQI categories (AOR = 2.17, 95% CI: 1.71–2.75, $p < .001$). Similarly, involvement of multiple body parts significantly increased impairment (AOR = 2.18, 95% CI: 1.64–2.89, $p < .001$) (42). This study also highlighted the importance of lesion distribution: facial lesions were strongly associated with self-consciousness, while genital lesions predicted sexual dysfunction (AOR = 1.94, 95% CI: 1.44–2.61, $p < .001$) (42). These findings are consistent with our observation that patients with both exposed and unexposed sites affected had five times higher odds of impairment (AOR = 5.03). Vitiligo was further shown to negatively impact lifestyle domains such as clothing choices, social activities, sports participation, and interpersonal relationships; findings that resonate with our Ethiopian cohort, where embarrassment and social activities were among the most affected DLQI domains.

Interestingly, this global study found no significant association between disease duration and DLQI impairment, whereas our study demonstrated that shorter disease duration (<1 year) was associated with more than threefold increased odds of impairment (AOR = 3.52). This contrast suggests possible cultural or psychosocial differences: Ethiopian patients may experience greater psychological shock and stigma early in the disease course, while patients in other settings may report cumulative burden over time.

Meta-analyses (2024) also confirm these associations. A pooled analysis of 58 studies involving 9,277 patients found a mean DLQI score of 8.07, with women consistently reporting higher

impairment than men (pooled DLQI 8.63 vs. 7.17) (43). This parallels our finding that female patients had more than twice the odds of impairment (AOR = 2.57). The same meta-analysis showed that African patients had the highest pooled DLQI scores (10.96), while European patients had the lowest (5.52), highlighting regional differences but confirming the global consistency of vitiligo's psychosocial burden.

6.3 Unique Ethiopian Contribution

Our study adds unique contributions to the literature. While global and regional studies consistently highlight younger age, female gender, extensive BSA, and visible lesions as predictors of QoL impairment, our Ethiopian data emphasize **shorter disease duration** and **single marital status** as strong independent predictors. The finding that single patients had more than five times higher odds of impairment (AOR = 5.39) underscores the importance of social support in mitigating psychosocial burden. The association between shorter disease duration and worse QoL suggests that Ethiopian patients may gradually adapt over time, contrasting with some global findings.

Integrating regional and international data, global evidence confirms that vitiligo extent, visibility, and distribution are universal predictors of impaired quality of life. Our Ethiopian study validates these associations while adding locally relevant insights into the role of marital status and disease duration, factors less emphasized in international literature.

6.4 Clinical and Public Health Implications

The implications of these findings are significant. First, they highlight the necessity of integrating psychosocial support into dermatology services in Ethiopia, as medical treatment alone cannot address the stigma and emotional burden of vitiligo. Clinicians should pay particular attention to younger, female, and single patients, as well as those with extensive and visible disease involvement. Psychosocial support, counseling, and patient education should be integrated into routine care to mitigate the impact of vitiligo on quality of life.

Second, they justify the development of public health campaigns to reduce misconceptions and discrimination, particularly targeting schools, workplaces, and communities. Third, they provide evidence for policymakers and the Ministry of Health to expand access to treatment modalities such as phototherapy, which remain scarce in Ethiopia. Finally, the study establishes baseline data for future multicenter research, which is essential to inform national strategies for vitiligo management.

6.5 Strengths of the Study

This study used a validated quality-of-life instrument (DLQI) and applied robust statistical methods to identify predictors of impairment. By including both sociodemographic and clinical variables, it offers a comprehensive understanding of the factors influencing patient well-being. Careful sample size calculation added methodological rigor, while situating the findings within African and global literature strengthened their external relevance. Importantly, vitiligo's impact on quality of life has been little studied in Ethiopia, and this research helps fill that gap with evidence that can guide both clinical care and public health. It may also draw greater attention to this overlooked issue and encourage further studies in the country.

6.6 Limitations

The study was conducted in a single tertiary hospital, which may not fully represent rural or community populations. Self-reported measures are subject to recall and reporting bias. Although the sample size was corrected for finite population, it remained relatively modest, which may have limited the detection of weaker associations. Finally, psychological comorbidities such as depression or anxiety were not formally assessed, even though they may play a role in shaping quality of life outcomes.

6.7 Conclusion

Vitiligo imposes a **substantial psychosocial burden** on Ethiopian patients, with embarrassment, clothing choices, and social activities most affected. Younger age, female gender, single marital status, shorter disease duration, extensive body surface area involvement, and visible site distribution emerged as strong predictors of impairment. These findings confirm global evidence while adding **unique Ethiopian insights**, particularly the role of marital status and early disease duration.

6.8 Recommendations

- **Clinical practice:** Dermatology services should move beyond medical treatment alone and incorporate psychosocial support and counseling into routine care. Special attention is needed for younger, female, and single patients, as well as those with extensive or visible lesions.
- **Public health:** Awareness campaigns should be developed to challenge stigma and misconceptions surrounding vitiligo. Schools, workplaces, and community platforms can play a vital role in reducing discrimination and promoting understanding.
- **Policy:** The Ministry of Health should prioritize expanding access to advanced treatment modalities, such as phototherapy, which remain limited in Ethiopia. Strengthening service availability would improve both clinical outcomes and quality of life.
- **Research:** Future studies should adopt multicenter and longitudinal designs to validate these findings, explore causal pathways, and assess interventions that improve quality of life. Addressing gaps such as the formal evaluation of psychological comorbidities (e.g., depression and anxiety) will provide a more complete picture of the burden of vitiligo.

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8. ANNEXES

Annex I. Information Sheet (English Version)

Title of the research: -Quality of life among adult patients with vitiligo attending Dermatovenerology outpatient department of Saint Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia 2024.

Greeting: Hello, how are you? I am -----I am a data collector on behalf of Dr Birhanu Beyesa who is a Dermatovenerology resident in SPHMMC who want to conduct this survey. I am interviewing you to assess the quality of life among among adult patients with vitiligo at Dermatovenerology OPD of SPHMMC. I am going to ask you some questions that are very important for the health care decision makers, patients, clinicians and policy makers among others make well informed decision and thereby improve the quality of life of patients with vitiligo disease. If you are willing to participate in the research, you need to sign the consent form then; you will be interviewed for about 10 minutes. There is no special benefit by participating in the study. Discussing psychological, emotional and/or relationship issues occasionally causes some pain and anxiety and making important changes will require effort on your part. Otherwise, no anticipated risk to the participants, no physical harm, social discrimination or economic loss. Your identification (name, house number, phone number) will not be written in the form and I assure you that all information that you give will be kept strictly confidential. Your participation is voluntary, and you are not obliged to answer any question you do not wish to answer. If you are not still comfortable with interview, please be free to stop me any time you like. You will not be denied any of the services for not participating on the study.

We would be thankful if you spend some time with us answering questions related to the issues described above.

If you agree Participant's Signature _____ Interviewer's Signature----- Date -----

For more information and question, here is the contact address of investigator.

Birhanu Beyesa (MD) Phone number: +251957017141 Email: birhanubeyesa@gmail.com

Annex II Consent Form (English Version)

I have read or heard what is written in the information sheet and willing to participate on the study to be conducted by Dr. Birhanu Beyesa on the quality of life among adult vitiligo patients attending out patient department of SPHMMC, Addis Ababa, Ethiopia 2025. I have understood that my information will be kept confidentially and participation to this study is voluntary and I can stop the interview anytime I felt uncomfortable. I fully consent to participate in this study.

Participant's Signature_____ Interviewer's signature----- Date-----

Annex III Information Sheet (Amharic Version)

ለተሳታፊዎች ስለጥናቱ መረጃ የሚሰጥ ቅጽ በአማርኛ

በአዲስ አበባ በቅዱስ ጳውሎስ ሆስፒታል የለምፅ በሽታ ያለባቸው ታካሚዎች የሕይወት ጥራት ለማወቅ የተሰራ ጥናት

ጤና ይስጥልኝ እኔ.....የቆዳ ህክምና ተማሪ ለሆነው ዶ/ር ብርሃኑ በዬሳ በቅዱስ ጳውሎስ ሆስፒታል

የለምፅ በሽታ ያለባቸው ታካሚዎች የሕይወት ጥራት ለማወቅ በሚሰራው ጥናት መረጃ በመስብሰብ ሊይ እገኛለሁ :: በዚህ ጥናት የሚገኘው ውጤት ለባለሙያዎች በማስረጃ የተደገፈ እቅድ ለማቀድና በዚህ ተመሳሳይ ጥናት ለሚያደርጉ ምሁራን ጥልቅ ጥናት ለማድረግ የሚያስችል መረጃ መሆን እንዲችል እንዲሁም አገልግሎቱን ለሚሰጡ የጤና ባለሙያዎች ጥራት ላለው ተጨማሪ አገልግሎት የመረጃ ግብዓት ሆኖ ያገለግላል ተብሎ ይታሰባል::

ፍቃደኛ ከሆኑ ከዚህ ቀጥሎ የሚኖሩትን የተስማሚነት ቅጾች መፈረም ይኖርበታል እንዲሁም ይህንን በፍቃደኝነት ላይ የተመሠረተን መጠይቅ ለመሙላት 10 ደቂቃ የሚፈጅብዎት ሲሆን ለመሳተፍ ካልፈልጉ አይገደዱም:: እንዲሁም በመጠይቁ መሳተፍ ከጀመሩ በኋላ በማንኛውም ሰዓት ማቋረጥ ይችላሉ:: ለጥያቄዎቹ የሚሰጥዎቸው መረጃዎች በሙሉ ሚስጥራዊነታቸው የተጠበቀ ስለሆነ ስለማንንነትዎ እና ስለሚመልሷቸው መልሶች ምስጢር መጠበቅ ምንም ስጋት አይግባዎት:: በተጨማሪም በሚሰጡት መረጃ አማካኝነት ምንም የተለየ ጥቅም አያገኙም ወይም መረጃ ባለመስጠትዎ አገልግሎቱ አይቋረጥብዎትም ወይም ሌላ ጉዳት አስከታይ ችግር አይገጥምዎትም:: ስለዚህ መረጃውን ለመስጠት እና በዚህ ጥናት ተሳታፊ እንዲሆኑልኝ በአክብሮት እጠይቀዎታለሁኝ::

ለተጨማሪ መረጃ

በስልክ ቁጥር+251957017141 ወይም ኢ-ሚይል: birhanubeyesa@gmail.com ሊያገኙኝ ይችላሉ::

በጥናቱ ለመሳተፍ ፈቃደኛ ከሆኑ በፊርማዎት ያረጋግጡልን

የተሳታፊው ፊርማ----- የመረጃው ሰብሳቢው ፊርማ -----ቀን-----

Annex IV Consent Form (Amharic Version)

የስምምነት ማረጋገጫ ቅጽ

በመረጃ ቅጽ ላይ የተጻፈውን የጥናት ዓላማና መረጃ በሙሉ አንብቤአለሁ ወይም ተነባኝነት ተረድቼውማለሁ፤ ስለዚህም በቅዱስ ጳውሎስ ሆስፒታል የለምፅ በሽታ የሚያስከትላቸውን የስነልቦና እና የማህበራዊ ጽናዎች ለማወቅ በተዘጋጀ መጠይቅ ላይ ለመሳተፍ ፈቃደኛ ነኝ። እኔ የምስጠው መረጃ በሚስጥር እንደሚጠበቅ እንዲሁም ይህ ጥናት በፍቃደኝነት ላይ የተመሠረተ እንደሆነ እና በማንኛውም ጊዜ መቀጠል ካልፈለኩኝ ማድረግ እንደምችል ተረድቻለሁ። ጥናቱ ላይ ባልመሳተፍ የሚምጣ ጉዳት እንዲሁም በመሳተፍ የማገኘው የተለየ ጥቅም እንደሌለ እረዳለሁ። ፍቃደኛ መሆኔንም በፊርማዬ አረጋግጣለሁ።

የተሳታፊው ፊርማ----- ቀን-----

የመረጃው ሰብሳቢው ፊርማ-----

Annex V Questionnaires:

SECTION. I Sociodemographic Status (English Version)

1	Sex	Male ----- Female ----- --
2	Age	a) Young adults: 18–24 years b) Early adulthood: 25–44 years c) Middle adulthood: 45–64 years d) Older adulthood: 65 years and above
3	Residence	Urban ----- Rural-----
4	Marital status	Single -----married -----divorced and/ or widowed-----
5	Educational status	Cannot read and write Primary education Secondary education Tertiary education (diploma and above)
6	Occupation	a) Farmer b) Merchant c) Employee d) Unemployed e) House wife f) Student g) Daily laborer h) Others mention.....
7	Monthly income	a) < 5104 ETB b) 5104 - 10600 ETB c) 10600 - 21491 ETB d) > 21491 ETB

SECTION.II Disease Characteristics (English Version)

1	Duration of illness	a) Below 1 year b) 1 - 5 years c) > 5 years
2	Site of involvement (more than one answer possible)	a) Hands and/or Forearms b) Feet and/or Legs c) Face and Neck d) Thighs and/or Arms e) Trunk (chest, abdomen, back, buttocks) f) Genitalia g) Others mention -----
3	Estimated BSA involved	a) $\leq 10\%$ b) 10 - 30% c) $> 30\%$
4	Number of current visit	a) New visit b) 2 nd visit c) 3 rd visit d) $\geq 4^{\text{th}}$ visit

SECTION.III Dermatology Life Quality Index (DLQI) English Form

Score: Diagnosis:

The aim of this questionnaire is to measure how much your skin problem has affected your life
OVER THE LAST WEEK. Please tick () one box for each question.

1, Over the last week, how itchy, sore, painful or stinging has your skin been?	Very much A lot A little Not at all Not Relevant	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
2, Over the last week, how embarrassed or self-conscious have you been because of your skin?	Very much A lot A little Not at all Not Relevant	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
3, Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?	Very much A lot A little Not at all Not Relevant	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
4, Over the last week, how much has your skin influenced the clothes you wear?	Very much A lot A little Not at all Not relevant	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
5, Over the last week, how much has your skin affected any social or leisure activities?	Very much A lot A little	3 ☐ 2 ☐ 1 ☐

	Not at all	0 ☐
	Not	0 ☐
	Relevant	
6, Over the last week, how much has your skin made it difficult for you to do any sport	Very much	3 ☐
	A lot	2 ☐
	A little	1 ☐
	Not at all	0 ☐
	Not relevant	0 ☐
7, Over the last week, has your skin prevented you from working or studying?	Yes	3 ☐
	No	0 ☐
	Not relevant	0 ☐
If "No" to Q7, over the last week how much has your skin been a problem at work or studying?	A lot	2 ☐
	A little	1 ☐
	Not at all	0 ☐
8, Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?	Very much	3 ☐
	A lot	2 ☐
	A little	1 ☐
	Not at all	0 ☐
	Not relevant	0 ☐
9. Over the last week, how much has your skin caused any sexual difficulties?	Very much	3 ☐
	A lot	2 ☐
	A little	1 ☐
	Not at all	0 ☐
	Not relevant	0 ☐
10, Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?	Very much	3 ☐
	A lot	2 ☐
	A little	1 ☐
	Not at all	0 ☐
	Not relevant	0 ☐

Please check you have answered EVERY question. Thank you.

SECTION.IV Sociodemographic Status (Amharic Version)

1	ፆታ	ወንድ..... ሴት.....
2	እድሜ	ሀ) ወጣት አዋቂዎች: 18-24 ዓመታት ለ) የጉርምስና ዕድሜ: 25-44 ዓመታት ሐ) መካከለኛ ጎልማሳ: 45-64 ዓመታት መ) አዛውንት: 65 ዓመት እና ከዚያ በላይ
3	የመኖሪያ ቦታ	ከተማ _____ ገጠር _____
4	የጋብቻ ሁኔታ	ሀ) ላገባ/ች ለ) ያገባ/ች ሐ) የተፋታ/ች ወይም የሞተበት/ችባት
5	የትምህርት ደረጃ	ሀ) ማንበብና መጻፍ የማይችል ለ) ማንበብና መጻፍ የሚችል ሐ) አንደኛ ደረጃ (ክፍል 1-8) መ) ሁለተኛ ደረጃ ክፍል 9-12) ሠ) ኮሌጅና ከዚያ በላይ
6	ሥራ	ሀ)ገበሬ.....ሠ)የቤት ሚስት..... ለ)ነጋዴ.....ረ)ተማሪ..... ሐ)ተቀጣሪ.....ሰ)የቀን ሰራተኛ..... መ)ሥራ አጦች.....ሸ)ሌሎች ይጠቅሳሉ
7	የወር ገቢ	ሀ) < 5104 ብር ለ) 5104 - 10600 ብር ሐ)10600 - 21491 ብር መ) > 21491

SECTION.V Disease Characteristics (Amharic Version)

1	ህመሙ የቆየበት ጊዜ	ሀ) ከ 1 ዓመት በታች; ለ) 1-5 ዓመታት ሐ) > 5 ዓመታት
2	በበሽታው የተጠቃው የሰውነት ክፍል ከ1 በላይ መልስ ይቻላል	ሀ) እጆች እና/ወይም ከንዶች ለ) እግሮች ሐ) ፊት እና አንገት መ) ጭኖች ሠ) ደረት፣ ሆድ፣ ጀርባ፣ መቀመጫዎች ረ) ብልት ሰ) ሌሎች ይጠቅሳሉ -----
3	ባጠቃላይ የተጠቃው የሰውነት አካል	ሀ) $\leq 10\%$ ለ) 10-30% ሐ) > 30%
4	የዛሬው የህክምና ክትትል ለስንተኛ ጊዜ ነው?	ሀ) አዲስ ጉብኝት ለ) 2ኛ ሐ) 3ኛ መ) 4ኛ እና ከዛ በላይ ጊዜ

SECTION.VI Dermatology Life Quality Index (DLQI) Amharic Version

የዚህ መጠይቅ አላማ የቆዳዎ ሁኔታ በአጠቃላይ ህይወት ላይ በባለፈው ሳምንት ያሳደረውን ተፅዕኖ መለካት ነው። እባክዎን ለእያንዳንዱ ጥያቄ አንድ የ” ✓ ” ምልክት ያድርጉ።

1. በባለፈው ሳምንት ሰውነትዎ ምን ያህል ማሳከክ፣ ቁስለት፣ ህመም እና የማቃጠል ስሜት ነበረው?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግንኙነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
2. በባለፈው ሳምንት የቆዳዎ በሽታ ምን ያህል አሳስብዎት እና አስጨንቆት ነበር?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግንኙነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
3. በባለፈው ሳምንት የቆዳዎ በሽታ ገበያ ሲሄዱ አንዳንድ ስራዎችን በቤት ውስጥ ሲያከናውኑ ምን ያህል ችግር ፈጥሮብዎታል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግንኙነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
4. በባለፈው ሳምንት የቆዳዎ በሽታ የሚለብሱትን ልብስ ምርጫ ምን ያህል ተፅዕኖ ፈጥሮብዎታል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግንኙነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
5. በባለፈው ሳምንት የቆዳዎ በሽታ ሚያደርጉትን ማህበራዊ እንቅስቃሴ እና መዝናኛት ሁኔታ ላይ ምን ያህል ተጽዕኖ ፈጥሮብዎታል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግንኙነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐

6. በባለፈው ሳምንት የቆዳዎ በሽታ የስፖርት እንቅስቃሴ እንዳያደርጉ ምን ያሕል ተጽዕኖ ፈጥሮብዎታል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግኑኝነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
7. በባለፈው ሳምንት የቆዳዎ በሽታ ከትምህርት ወይም ከስራ አግዶታል?	አዎ አላገደኝም	3 ☐ 0 ☐ 0 ☐
ለ7ኛው ጥያቄ መልሶት አላገደኝም ከሆነ ከ ምን ያህል በስራዎ እና ትምህርትዎ ላይ ችግር ፈጥሮብዎታል?	በጣም በመጠኑ በፍፁም	2 ☐ 1 ☐ 0 ☐
8. በባለፈው ሳምንት የቆዳዎ በሽታ በርሶ የቅርብ ዘመድ ወይም ጓደኞች ጋር ባለዎት ግንኙነት ላይ የፈጠረብዎት ችግር ምን ይመስላል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግኑኝነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
9. በባለፈው ሳምንት የቆዳዎ በሽታዎ በተቃራኒ የታ ግንኙነት ላይ የፈጠረብዎት ችግር ምን ይመስላል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግኑኝነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐
10. በባለፈው ሳምንት የህክምናዎ ሁኔታ ያደረሱበዎት ተጽዕኖ ምን ይመስላል ለምሳሌ ቤትዎን በማመሳቀል ወይም ብዙ ጊዜ በመውሰድ ሊሆን ይችላል?	እጅግ በጣም በጣም በመጠኑ በፍፁም ግኑኝነት የለውም	3 ☐ 2 ☐ 1 ☐ 0 ☐ 0 ☐

ስለ ትብብሮት ክልብ እናመሰግናለን፡፡

Assurance of Principal Investigator

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

Name of the student: _____

Signature: _____

Date: _____

Approval of the Primary Advisor

Signature: _____

Approval of the Co-Advisor

Name of the primary advisor: _____

Signature: _____

Date: _____