



**ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
DEPARTMENT OF DERMATOVENEROLOGY**

**QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG CHRONIC
URTICARIA PATIENTS ATTENDING DERMATOLOGY OPD, IN
DERMATOVENEROLOGY TEACHING HOSPITAL, ADDIS ABABA,
ETHIOPIA**

Investigator: DR. LIDET KEBEDE (MD, DERMATOVENEROLOGY RESIDENT)

**A THESIS SUBMITTED TO THE DEPARTMENT OF
DERMATOVENEROLOGY, SCHOOL OF MEDICINE, SPHMMC IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR SPECIALTY
IN DERMATOVENEROLOGY.**

Addis Ababa, Ethiopia

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Submission Guide

Name of investigator	Lidet Kebede (MD, Dermatovenereology resident)
Full title of the research project	Quality of life and associated factors among chronic urticaria patients in Dermatovenereology

	teaching hospital, Addis Ababa, Ethiopia
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List of acronyms

ALERT:	All African Leprosy Rehabilitation Training Center
AA:	Alopecia Areata
CU:	Chronic Urticaria
CU-Q2oL:	Chronic Urticaria Quality of Life questionnaires
CindU:	Chronic Inducible urticaria
DLQI:	Dermatology Life Quality Index
ETB:	Ethiopian Birr
G.C:	Gregorian calendar
HRQL:	Health-related quality of life
IQR:	Inter Quartile Range
IRB:	Institutional Review Board
OPD:	Outpatient department
PI:	Principal Investigator
QoL:	Quality of life
SD:	Standard deviation
SPHMMC:	Saint Paul Hospital Millennium Medical College
SPSS:	Statistical Package for Social Sciences version 2
USA:	United States of America
WHO:	World Health Organization

Abstract

Background: Chronic urticaria is a skin condition that significantly impairs patients' quality of life, leading to significant physical limitations, psychological distress, and emotional impacts. However, no study has been done assessing its impact on patient's day to day life in Ethiopia, which may contribute to underestimating the disease burden. This study aims to assess quality of

life among Chronic urticaria patients, assess the associated factors including disease severity and improve patient outcome.

Objective: this study aimed to assess quality of life and associated factors among chronic urticaria follow up patients attending Dermatovenerology outpatient department in Dermatology teaching hospital, Addis Ababa

Methods: A hospital-based cross-sectional study was conducted among selected patients with chronic urticaria. A total of 234 study participants were included from two selected dermatology teaching hospitals in Addis Ababa. Study participants were recruited using systematic random sampling technique and selection for study area was carried out using simple random sampling methods. Disease severity was assessed using the Urticaria Activity Score, while quality of life was evaluated using the Dermatology Life Quality Index. Data was collected through face-to-face interviews. Median, and Inter Quartile Range (IQR) were used to describe Continuous data; and frequency and percentage were used to describe categorical data. Non-parametric tests were applied to check association. Mann–Whitney U tests were used for binary variables, Kruskal–Wallis H tests for variables with more than two groups, and Spearman correlations for continuous variables. Statistical significance was declared at $p < 0.05$. Finally, the result is presented using table charts and graphs.

Result: There was female predominance in this study (59.4%). The median age (IQR) was 35 (28, 46.25) year. Median DLQI was 12 (IQR: 6 -17). Urticaria severity score showed most participants (54.7%) had moderate to severe disease activity. Most participants (65.9 %) had moderate to severe impact on their quality of life. Symptoms and feelings were the most affected domain from DLQI score.

Conclusion:

This study demonstrates that more than half of study participants with CU have moderate to severe impairment on their QoL, with higher disease severity, longer disease duration and patients who started sedating antihistamine being associated with poorer QoL.

Key words: Quality of life, Chronic urticaria, ALERT, Ethiopia

1. Introduction

1.1. Background

Urticaria is a skin disorder characterized by local transient skin or mucosal edema (wheal) and area of redness (erythema) that typically accompany itchy sensations and diminish within 1 day. Studies in Europe reported the lifetime prevalence of urticaria as around 8% to 10%(1). Women are affected twice as often as men and the condition typically begins in the third to fifth decades of life but children can also get affected. Urticarial Lesions are extremely pruritic, and pruritus may be severe enough to disrupt work, school, or sleep

Urticaria is classified into acute and chronic at 6 weeks from the onset. Chronic urticaria is the presence of urticaria (hives), on most days of the week, for a period of six weeks or longer. Chronic urticaria is further classified into spontaneous urticaria and inducible urticaria.

Spontaneous urticaria occurs spontaneously almost every day without any apparent cause or trigger.

Chronic inducible urticaria is induced by physical stimuli and includes cold urticaria, delayed pressure urticaria, heat urticaria, solar urticaria, symptomatic dermographism, vibratory angioedema, cholinergic urticaria, and contact urticaria (1).

About 40 percent of patients with CU have accompanying episodes of angioedema. Angioedema is a local and transient skin or mucosal edema that develops in deep tissues mostly without itching but may accompany pain or burning sensations. No external allergic cause or contributing disease process can be identified in 80 to 90 percent of adults and children with CU. The average duration of CSU is frequently reported as 5 year but may be longer in more severe cases (2).

The etiology and pathogenesis of urticaria is thought to be a rapid and transient vasodilation and extravasation of plasma into cutaneous or mucosal tissues accompanied by itch sensory nerve activation. These reactions are mostly explained by degranulation of cutaneous mast cells, which release histamine and other vasoactive mediators, including arachidonic acid metabolites, such as prostaglandins and leukotrienes (1).

1.2 Statement of the problem

Chronic urticaria, despite its low mortality, can have devastating effects on patients with QoL. The two most important drivers of quality-of-life impairment in CU are the unpredictable course of the disease characterized by sudden onset of wheals with or without angioedema and the severe pruritus which affect a wide range of daily activities, from personal care to sleep/rest, work performance and social relationships (9).

Globally, no specific trigger or etiology can be identified in 80 to 90 percent of patients with CSU resulting in chronic and recurrent unpredictable symptoms which contributes to significant psycho-social impact, and emotional impacts such as self-consciousness, embarrassment and feeling of loss of control on their life (9, 10, 13).

Multiple Studies have shown that CU has moderate to severe impairment on patient's QoL with greater impairment on DLQI domain of symptoms and feeling, embarrassment and daily activities (6,7,18).

In addition to physical and emotional impact, studies indicate that CU can lead to high socioeconomic burden through combination of direct health care costs and loss of work productivity (13,15).

Furthermore, considerable variation existed in the reports of quality-of-life impairment across different countries which suggest the influence of sociodemographic, clinical and treatment factors on patient QoL (6,7,10, 21).

Despite the significant burden of CU, its impact on patient's quality of life was not studied in Ethiopia. Furthermore, the management of CU was challenged by limited choices of treatment modality together with high cost of the medication which may decrease patient compliance and worsen disease outcome. Moreover, disease severity and the extent of impairment in their QoL are not routinely assessed in the clinical practice leading to underestimation of the disease burden. This study assesses QoL and associated factors among CU patients and evaluates the severity of the disease to see how it correlates with the QoL. It will also remind clinicians to discuss disease nature, assess disease activity based on patient self-report improving overall patient centered care.

1.3 Significance of the study

Assessing QoL crucial for healthcare providers to identify factors that impact patients' wellbeing and to recognize important aspects of care that need to be improved. Additionally, as

understanding increases of how CU affects quality of life, medical decisions are coming closer to the perspectives of the patients with respect to their disease and its treatment. This broadens the scope of the doctor-patient relationship, consequently rendering it more humane. Therefore, evaluations of quality of life become established as an integral part of treatment.

This study will raise awareness among healthcare providers and policymakers about the impact of the disease on patients' quality of life and provide evidence-based insights to inform about the need for affordable and accessible medication, training healthcare providers on CU for early diagnosis, management and timely referral in rural areas since delay in diagnosis lead to prolonged suffering.

As first study in Ethiopia, it will provide a baseline information for further studies.

2.Literature review

2.1 Quality of life in chronic urticaria patients

Chronic urticaria is a debilitating skin disease characterized by recurrent appearance of itchy hives and/or angioedema lasting for six weeks or longer.

Many studies have assessed the quality of life among chronic urticaria patients, consistently highlighting significant impairment in patients day to day life. Studies conducted in brazil, Iraq have revealed that QoL in chronic urticaria affected in moderate to severe range of impairment emphasizing the pervasive impact of the symptoms such as itching, swelling and the unpredictability of flare-ups with mean DLQI score of 13.5 which is higher than Hansen's disease, psoriasis, atopic eczema and basal cell carcinoma (3, 6).

These finding align with global evidence that CU profoundly disrupts physical functioning, emotional well-being and social relationships(9).

Other Studies on assessing QoL using DLQI score have also shown that CU significantly affects patient's QoL, primarily due to unpredictable symptoms such as [itching (mean score of 49), wheels(mean score 37.5)], [sleep disturbance(41.5)], [daily activities(mean score 25.1)] (4).

AWARE study which is international, prospective real life study conducted in France revealed CU have moderate effect on patients life with mean DLQI score 8.6 for 31.8% of study participants, very large impairment on patients life for 33% and extremely large effect for 2.3% of study participants (5).

Studies conducted in Brazil in 2010 and 2011 on assessing quality of life using DLQI revealed moderate impairment in QoL; the domains indicative of greater impairment of quality of life were symptoms and feeling and daily activities (3, 7).

On other hand, study in Brazil in 2016 revealed that moderate DLQI impairment mainly on the work productivity and personal relationships (4).

A study done on the quality of life of Portuguese patients with CU have shown that the impact of disease on quality of life may not be directly related to its clinical severity, but to the stigma and cause, as urticaria has been associated with a negative emotional impact, leading to somatization, depression, anxiety, insomnia, stressful life events (10).

Studies conducted in India, on assessment of quality of life using CUQ2OI which consists five domains (symptoms, impact on life activities, sleep problems, limits, and looks) as assessment tool have shown that, the domain related to symptoms and their impact on daily life activities are among the most significantly impaired. These studies highlight the substantial burden of CU, with patients frequently reporting challenges such as persistent itching, discomfort and swelling which disrupt their physical, emotional, and social well- being (11,12).

A survey done in five European countries have found that depression, anxiety and sleep difficulties were approximately twice as prevalent among those currently receiving treatment for CU($p < 0.001$) that the unpredictable nature of CU symptoms as well as the uncertainty of the causes particularly in CSU often leads to heightened anxiety among patients together with moderate DLQI score (13).

Chronic urticaria has profound psychological effect, with studies reporting high rate of depression (40% of study participants) and anxiety(20% of study participants) mainly related to the unpredictable nature of symptoms including intense itching, angioedema, visible lesions leads to significant emotional stress (10, 13).

Many patients with CSU suffer from daily or almost daily occurrence of the symptoms. Accordingly, these patients live in a constant expectation of newly appearing wheals and angioedema, which leads to feeling of losing control over their lives and further negative emotional impacts include self-consciousness and embarrassment, frustration (9).

2.2 Factors affecting quality of life among chronic urticaria patients

The degree to which domains of DLQI affected varies based on age, gender, educational status. Regarding gender, women reported higher DLQI score than males mainly in the domains of symptoms and feeling, leisure and personal relationships. Women are also more affected emotionally due to the visible symptoms. Even though there are few studies which shows males report higher DLQI score in the domains of work and productivity, treatment than women, most studies have shown that male have lower DLQI score(1,2, 8).

Patients with more education (secondary and higher education) reported higher impact of CU on quality of life on domain of embarrassment and sports, when compared with those without education or with primary education (3,8,10).

A survey on QOL of chronic urticaria patients showed that occurrence of angioedema was in 82% of patients in Brazilian study where 100 patients interviewed; Presence of angioedema was the only variable that was significantly associated with worst scores on DLQI. The mean score ($\pm$ SD) of DLQI for patients with angioedema was 14.3 ($\pm$ 5.3) versus 9.9 ($\pm$ 3.8) for patients without angioedema (3).

Urticaria treatment may also interfere with the patient's comfort by inducing effects, such as somnolence (9).

Retrospective, and cross-sectional study conducted in South Korea in 2020 where 500 CSU patients enrolled in the study, UAS7 assessed and 22.2% patients were in well-controlled status, 31.2% had mild, 28.4% had moderate, and 18.2% had severe disease. The study also showed that QoL worsened with an increase in disease activity (18).

In Brazilian study which was done among 62 CU patients no statistically significant differences were found between the clinical types of chronic urticaria (CSU, CindU) with respect to age, gender, duration of the disease or duration of follow up at the clinic.

Regarding disease duration, patients with up to one year of the disease had poorer quality of life scores, with statistically significant differences in the following domains of the DLQI: leisure, personal relationships and overall score. (7) Conversely, longer duration of illness was associated with lower scores on DLQI domain of symptoms and daily activities, but with higher scores on domain of embarrassment and work/study. (3)

Patients attending their first consultation had poorer quality of life scores compared to the other patients, with statistically significant differences in the following domains of the DLQI: symptoms and feelings, work/school, personal relationships, and overall score (7).

In addition to the symptoms, Chronic urticaria can affect quality of life due to associated triggering factors and a study conducted in India, the finding have shown that exposure to house dust was the most common trigger, affecting 50% of participants and food additives were identified as the second major trigger in 40% of participants., sweat in 7.5%, stress in 5.6%, pressure in 24.1% of study population. Addressing these triggers is essential for improving the quality of life in patients with chronic urticaria (11).

2.7 Conceptual framework

In this study, quality of life (QoL) among chronic urticaria patients was considered the dependent variable. It is influenced by three main categories of independent variables: sociodemographic factors, disease-related factors, and treatment-related factors.

Sociodemographic variables may affect patients' perception about the disease and access to healthcare, thereby influencing their quality of life.

Disease-related factors, including type of chronic urticaria, duration of illness and disease severity might have impact on the physical wellbeingness of patients ,which in turn affect QoL.

Treatment-related factors, such as type of medication and dosage, may influence symptom control as well as side effects,, thereby affecting overall quality of life.

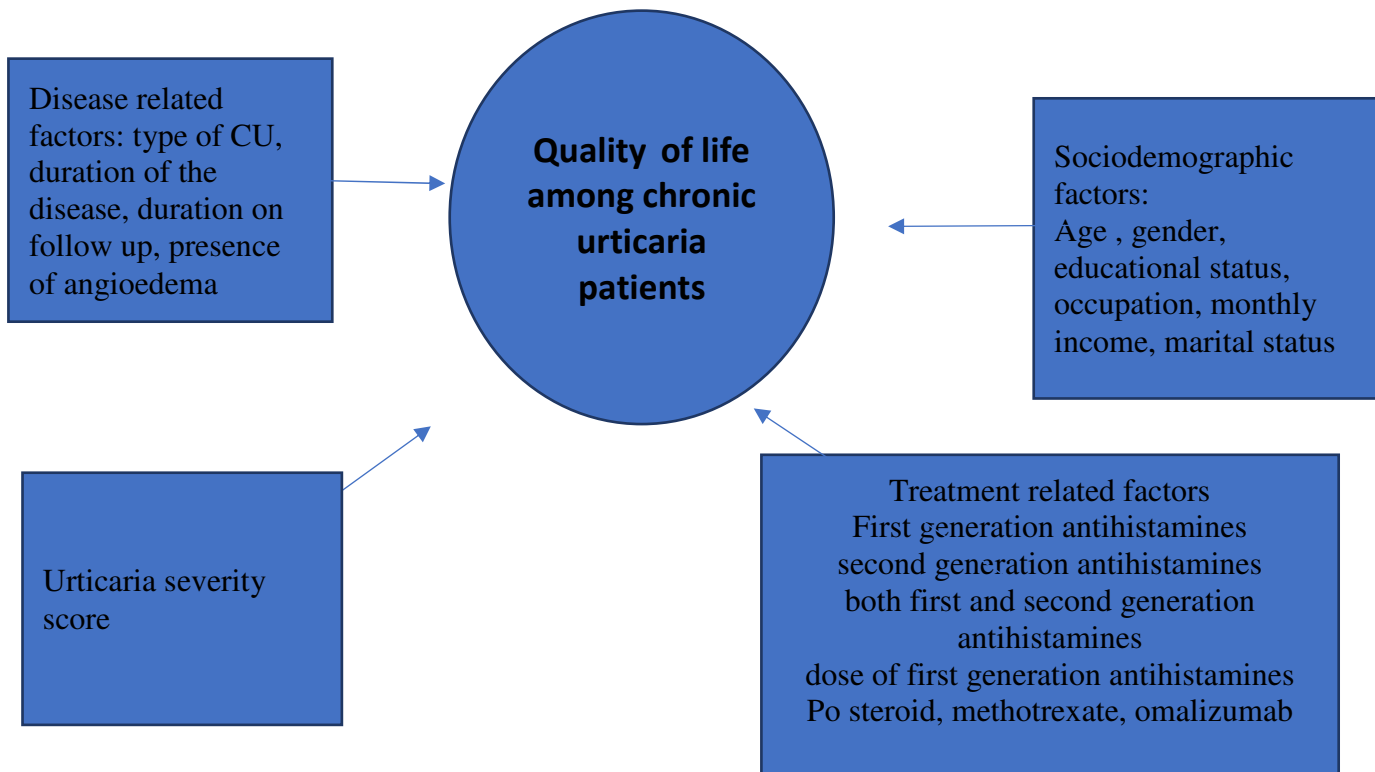


Figure 1: conceptual framework to assess QoL in chronic urticaria patients

3.Objectives

3.1 General objectives

- ❖ To assess quality of life and associated factors among CU follow-up patient attending Dermatology OPD in Dermatovenerology teaching hospital, Addis Ababa

3.2 Specific Objective

- ❖ To assess quality of life among CU follow-up patients
- ❖ To examine the relationship between associated factors and quality of life among CU follow up patients

4. Method and Materials

4.1. Study area and period

The study was conducted at dermatology OPD of selected Dermatology teaching hospital (Saint Paul's Hospital Millennium Medical College and ALERT hospital) from May 2025 to December 2025.

St. Paul's Hospital is one of the second largest specialized tertiary referral hospitals in the country, located in Addis Ababa. 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 2800 clinical, academic and administrative and support staffs. There are 9 Dermatovenereologists, one dermatosurgeon, 20 Dermatovenereology residents and 6 nurses.

The other study area is ALERT specialized hospital which is the continuation and expansion of leprosy hospital originally built by dr Thomas Lambie in 1922. It is one of the dermatologic centers in the country but it also provides a wide range of services in the various departments.

Study period: The study was conducted from May 2025 to January 2026.

4.2. Study design

- ❖ Hospital-based cross-sectional study was carried out.

4.3. Population

4.3.1. Source population

- ❖ All patients with chronic urticaria who visited dermatology outpatient departments of the selected teaching hospitals in Addis Ababa.

4.3.2. Study population.

- ❖ All selected chronic urticaria follow up patients who fulfilled Inclusion criteria ,visited dermatology OPD of the selected teaching hospitals in Addis Ababa during the study period

4.4. Eligibility

4.4.1 Inclusion

- ❖ All chronic urticaria patients on follow-up whose age is >16 years attending dermatology OPD during the study period in dermatology teaching hospital, Addis Ababa.

4.4.2 Exclusion criteria

- ❖ Patients diagnosed with urticarial vasculitis, and patients with acute psychiatric disorder, first time visit at dermatology OPD

4.5. Sample size determination and sampling technique

4.5.1 Sample size calculation

Sample size was determined by using single population proportions formula taking the estimated population proportion 50. %. Since there is no prior study that had been done on QoL of chronic urticaria patients in Ethiopia.

$$n^o = \frac{(Z_{\alpha/2})^2 \times P(1-P)}{(d)^2}$$

is used to estimate the sample size of clients to be interviewed

Where

n = desired sample size for a population

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

d = margin of error = 5% (0.05)

Based on the above assumptions a total of **384** patients is required for the study.

The total chronic urticaria patients visited dermatology OPD in selected Dermatology teaching hospital (SPHMMC and ALERT hospital) in the previous 8 month were 476 (180 at SPHMMC and 296 at ALERT hospital) from HMIS data. So, correction formula was used since the total population is < 10,000.

$$n_{\text{corrected}} = \frac{n_o}{1 + \frac{n_o}{N}}$$

Where

$n_{\text{corrected}}$ = final sample size

n_o = initial sample size (384)

N = total population (from HMIS)

The final sample size with population correction formula will be 213

When we add 10% non-response rate, the final sample size will be 234. To allocate the sample size proportionally at two centers, the proportion is determined for each center, 38% from SPHMMC and 62% from ALERT hospital. With this, 140 study participants included from ALERT hospital and 94 study participants were included from SPHMMC.

4.5.2 Sampling technique

The three dermatology teaching hospitals in Addis Ababa are Saint Paul's Hospital Millennium Medical College (SPHMMC), Black Lion Specialized Hospital, and ALERT Specialized Hospital. Two of these hospitals were selected randomly using the lottery method, namely SPHMMC and ALERT Specialized Hospital.

A systematic random sampling method was used to select the study participants. The total number of chronic urticaria patients who attended the dermatology outpatient departments of the two hospitals during the previous eight months was 476. The sampling fraction (k-interval) was calculated as $N/n = 2$. The first study participant was selected randomly, and thereafter every other participant was included until the required sample size was achieved.

4.6. Variables

4.6.1 Dependent

- Quality of Life of CU patients

4.6.2. Independent

- ❖ Socio-demographic variables: Age, Sex, occupation, education, Occupation, Monthly income.
- ❖ Disease related variables: type of CU, presence of angioedema, disease duration, duration of follow up at OPD
- ❖ Treatment related: type of treatment given, dose of treatment
- ❖ Disease severity: measured using Urticaria Activity Score

4.7 Data Collection Tool and Procedures

Structured questionnaires were developed after reviewing previously published literature (3, 4, 10, 18). Data were collected through face-to-face interviews.

The questionnaires included sociodemographic data and relevant clinical information thought to impact the quality of life (QOL) of patients with chronic urticaria, the Urticaria Activity Score (UAS) to assess disease severity, and, in the final section, the validated Amharic version of the Dermatology Life Quality Index (DLQI) (17).

After obtaining informed consent, data were collected by four dermatology residents at SPHMMC and ALERT Specialized Hospital. All data collectors received one day of training on the data collection tools and procedures

4.8 Data Quality assurance

To ensure data quality, the questionnaire was pretested on 5% of the sample size at Selam Health Center and they were excluded from the actual study. Based on the pretest findings, the questionnaire was assessed for clarity, understandability, and simplicity, and any identified difficulties were addressed through necessary modifications.

The investigator checked the completeness of the filled questionnaires on daily basis and supportive supervision was also conducted throughout the data collection period.

4.12. Data processing and Analysis

After data collection, the questionnaires were checked for completeness, coded, and entered into SPSS version 27 for analysis. Data cleaning was performed to identify and correct inconsistencies, missing values, and entry errors.

Descriptive statistics were used to summarize the socio-demographic and clinical characteristics of the study participants. Frequencies, percentages, means, and standard deviations were calculated as appropriate for categorical and continuous variables.

The Dermatology Life Quality Index (DLQI) scores were computed according to the standard scoring guidelines. DLQI total scores were summarized using mean and categorized into severity levels to determine the extent of quality-of-life impairment among patients with Urticaria.

Since QOL scores violated normality assumptions, non-parametric tests were applied. Mann–Whitney U tests were used for binary variables, Kruskal–Wallis H tests for variables with more than two groups, and Spearman correlations for continuous predictors. Statistical significance was declared at $p < 0.05$.

4.10 Operational Definitions

- ❖ **A diagnosis** of chronic urticaria was made clinically by Dermatovenerology residents and Dermatovenereologists.

The clinical diagnosis of chronic urticaria is sudden appearance of erythematous pruritic edematous plaque in which the individual lesion resolves within 24 hour and reappear again, these features occur on most days of the week, for a period of six weeks or longer (2).

- ❖ **CSU: urticaria** that occurs spontaneously almost every day without any apparent cause or trigger(1).
- ❖ **CindU**: is urticaria induced by physical stimuli which includes pressure, heat, cold, sun exposure, water (1).

- ❖ **Urticarial activity score**

Urticarial activity score is the most widely used and validated tool for assessing the severity of urticaria and disease activity. It is patient reported outcome measure that assess the number of hives and itch severity twice a day or daily basis. This generates a weekly score (UAS7), calculated as the sum of daily number of hives and itch severity score over 7 days

But, because of recall bias, one time scoring of UAS will be used to assess disease activity.

0: no disease activity

1-2: Mild

3-4: Moderate

5-6: Severe

- ❖ **Type of Treatment**: first generation h1antihistamines, Second generation h1anti histamines, po steroid, omalizumab, methotrexate

❖ Dose of treatment second generation h1 antihistamines

Standard dose of second generation h1 antihistamines: recommended therapeutic dose approved for treating allergic conditions (e.g. Cetirizine 10mg po once/day)

❖ **Higher dose of second generation h1 antihistamines:** up to 4 times the standard dose

❖ **Dermatology Life Quality Index (DLQI):** the most widely used questionnaire in most clinical trials on CU which consists of 10 questions, subdivided into 6 domains (symptoms and feelings, daily activities, leisure, work/school, personal relationships, and treatment). Each question is scored on a scale of 0 to 3 (ranging from 0 [not at all] to 3 [very much]). The DLQI is calculated by summing the score of each question with a maximum of 30 and a minimum of 0; the higher the score, the worse the QoL

- 0–1 is no impairment on patient's QOL
- 2–5 is mild impairment on patient's QOL
- 6–10 is moderate impairment on patient's QOL
- 11–20 is severe impairment on patient's QOL
- 21–30 is very severe impairment on patient's QOL

4.13. Ethical consideration

Ethical approval was obtained from the Institutional Review Board of Saint Paul's Hospital Millennium Medical College. The ethical approval was also presented to the Chief Executive Officer of ALERT Specialized Hospital and the Head of Dermatology Department.

Informed consent was obtained from the study participants after explaining the purpose of the study and providing information sheet with detailed explanations. The information obtained was used solely for research purposes, and the collected data was anonymized. Confidentiality was maintained throughout the study.

4.14. Dissemination and utilization of results

The finding of this research will be submitted to SPHMMC, department of Dermatoverenology and will be presented during the final defense for partial fulfillment of speciality.. Furthermore, the manuscript will be published in peer reviewed journals.

5 Result

5.1 Demographic Characteristic of study population

A total of 234 participants were included in this study. Females constituted more than half of the participants (139, 59.4%). The median age (IQR) was 35 (28, 46.25) years, with the more than a quarter falling within the 30–39 years (69, 29.5%) and 18–29 years (65, 27.8%) age groups.

Regarding marital status, nearly two-thirds (150, 64.1%) of the participants were married, while 77 (32.9%) were single. In terms of educational status, the More than a quarter of participants had attended college or university (67, 28.6%), followed by those who completed grades 9–12 (65, 27.8%). Nearly one-quarter of the participants were unable to read and write (54, 23.1%).

Concerning occupation, more than a quarter (66, 28.2%) were housewives, followed by private employees (61, 26.1%) and government employees (45, 19.2%). More than two thirds (161, 68.8%) of participants resided in urban areas.

The average monthly income of the participants was $8,275 \pm 6,302.5$ Ethiopian birr, with the largest proportion earning 5,001–10,000 birr (91, 38.9%). The details of sociodemographic characteristics of study population are presented in table 1.

Table 1 Demographic characteristics patients attending at the ALERT Hospital and SPMMC 2025GC

Variables		Frequency	Percent
Age	16–29 Years	65	27.8
	30–39 Years	69	29.5
	40–49 Years	46	19.7
	50–59 Years	30	12.8
	≥60 Years	24	10.3
	Total	234	100.0
Gender	Male	95	40.6
	Female	139	59.4
	Total	234	100.0
Educational status	College/university	67	28.6
	Grade9_12	65	27.8
	Grade 1 -8	46	19.7
	Other(specify)	2	0.9
	Unable to read and write	54	23.1
	Total	234	100.0
Marital status	Divorced	6	2.6
	Married	150	64.1
	Single	77	32.9
	Widowed	1	0.4
	Total	234	100.0
Occupation	Farmer	34	14.5
	Governmental employee	45	19.2
	Housewife	66	28.2
	Other(specify)	5	2.1
	Private employee	61	26.1
	Student	23	9.8
	Total	234	100.0
Residence	Rural	73	31.2
	Urban	161	68.8
	Total	234	100.0
Monthly Income	≤ 2,000 birr	35	15.0
	2,001 – 5,000 birr	62	26.5
	5,001 – 10,000 birr	91	38.9
	10,001 – 20,000 birr	30	12.8
	> 20,000 birr	16	6.8
	Total	234	100.0

5.2 Clinical characteristics

In our study, the majority (225, 96.2%) had chronic spontaneous urticaria (CSU), while 9 (3.8%) had chronic inducible urticaria (CIndU). For those with CIndU, pressure was the most common triggering factor (5, 55.6%), followed by water (2, 22.2%), cold (1, 11.1%), and sunlight (1, 11.1%).

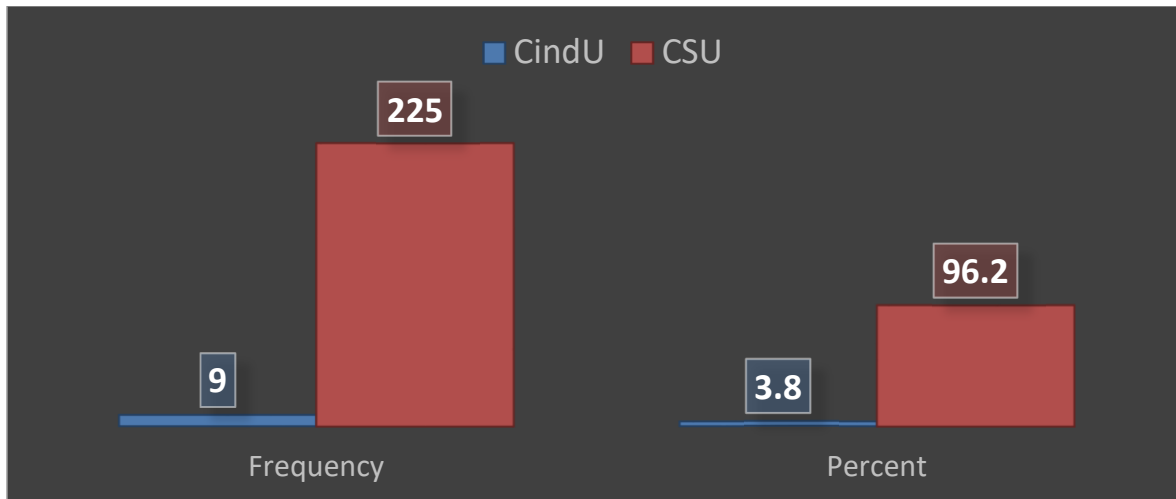


Fig 2 Type of chronic urticaria in patients attending at the ALERT Hospital and SPMHC 2025GC

The median duration of illness (IQR) was 6(4, 9) months, with more than one third (91, 38.9%) participants experiencing symptoms for 4–6 months. The mean duration of follow-up was 3.8 ± 3.5 months, with 44.0% (103 participants) followed for 1–3 months.

Regarding treatment, most participants received second-generation antihistamines (191, 88.4%), while smaller proportions were treated with montelukast (13, 6.0%) or both first- and second-generation antihistamines (12, 5.6%). Among those on second-generation antihistamines, 156 (76.8%) received the standard dose, and 47 (23.2%) received a higher dose. Only 9 (3.8%) participants reported angioedema.

The number of wheals in the last 24 hours varied: <20 wheals (78, 33.3%), 20–50 wheals (68, 29.1%), >50 wheals (20, 8.5%), and no wheals (68, 29.1%). The intensity of itch in the last 24 hours was severe and interfering with daily activities or sleep in 64 (27.4%) participants, troublesome but not interfering in 64 (27.4%), present but not troublesome in 53 (22.6%), and absent in 53 (22.6%).

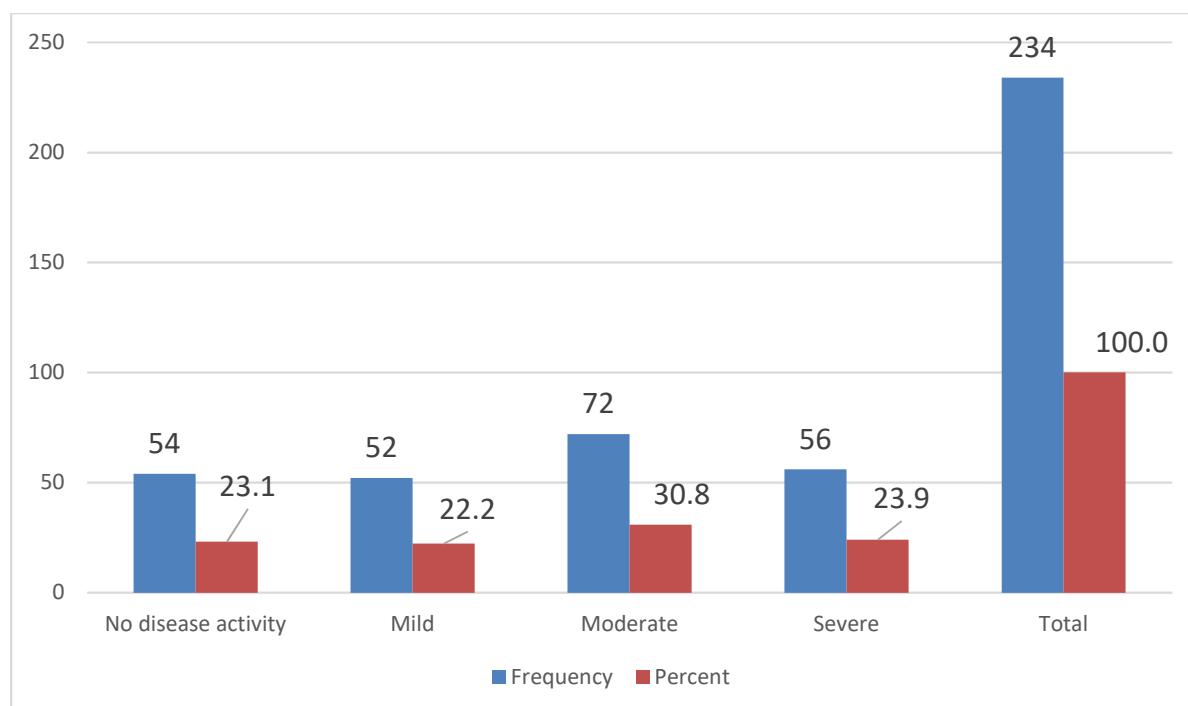


Fig 3 severity of urticaria and disease activity in patients attending at the ALERT Hospital and SPMMC 2025GC

The Urticarial Activity Score (UAS) showed that most participants had moderate disease activity (72, 30.8%), followed by severe (56, 23.9%) and mild activity (52, 22.2%). No disease activity was observed in 54 (23.1%) participants.

Tabl5e 2: Clinical Characteristics of patients with urticaria attending at the ALERT Hospital and SPMMC 2025GC

Variables		Frequency	Percent
Duration in month	≤ 3 months	51	21.8
	4–6 months	91	38.9
	7–12 months	75	32.1

	> 12 months	17	7.3
	Total	234	100.0
Duration of Follow up	< 1 Month	24	10.3
	1–3 months	103	44.0
	4–6 months	66	28.2
	7–12 months	34	14.5
	> 12 months	7	3.0
	Total	234	100.0
Type of treatment	Both second- and first-generation antihistamine	18	5.6
	Montelukast	13	6.0
	Second generation antihistamine(cetirizine, loratadine)	203	88.4
	Total	234	100.0
Dose of second-generation antihistamine	Higher dose	47	23.2
	Standard dose	156	76.8
	Total	203	100.0
Is there angioedema	No	225	96.2
	Yes	9	3.8
	Total	234	100.0
How many wheals did you have in the last 24hr	No wheals	68	29.1
	<20 wheals	78	33.3
	20 _50 wheals	68	29.1
	>50	20	8.5
	Total	234	100.0
intensity of itch in last 24hr	None	53	22.6
	Present but not troublesome	53	22.6
	Troublesome but does not interfere with normal daily activity or sleep	64	27.4
	Severe itch which interferes normal daily activities or sleep	64	27.4
	Total	234	100.0

5.3 Quality of life of patients with chronic urticaria

In this study, the median Quality of life score was 12 (IQR: 6–17).Based on the Dermatology Life Quality Index (DLQI), most participants experienced a severe impact on quality of life, with 97 (41.5%) reporting severe impairment and 27 (11.5%) reporting very severe impairment. Moderate impairment was observed in 57 (24.4%) participants, while 40 (17.1%) had mild impairment and only 13 (5.6%) reported no impairment.

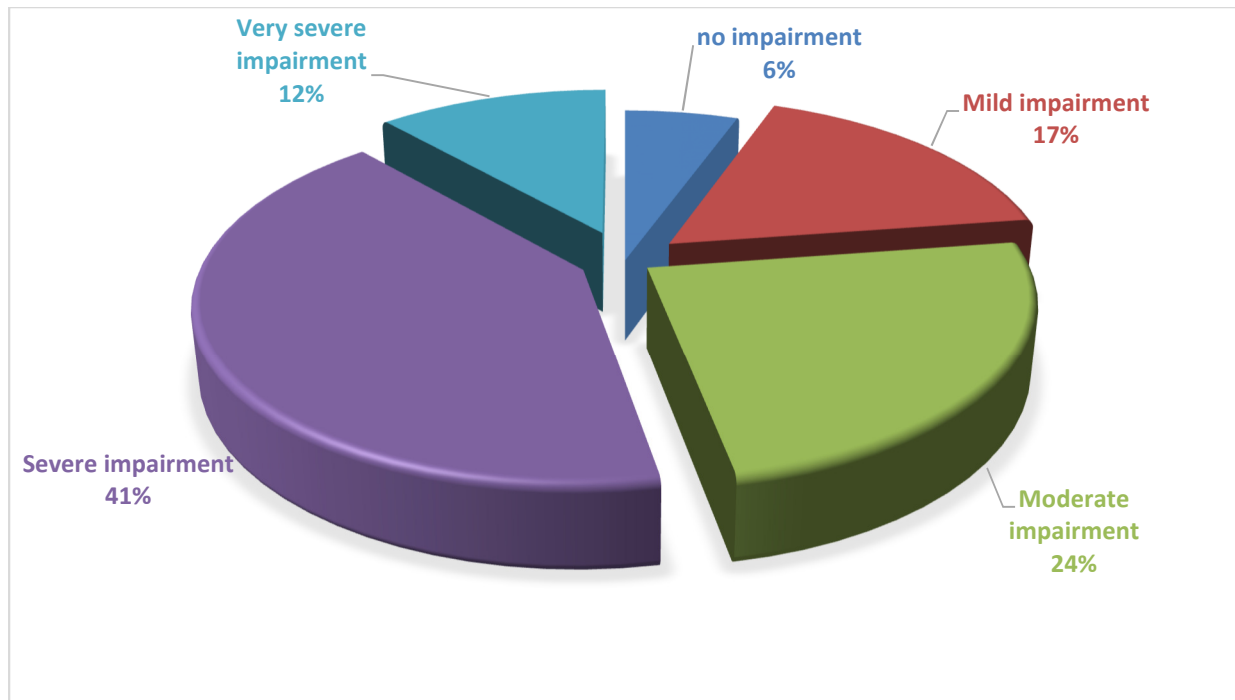


Fig 4 Impact on quality-of-life patients with chronic Urticaria attending at the ALERT Hospital and SPMMC, Addis Ababa, Ethiopia, 2025GC

Item-level analysis of the Dermatology Life Quality Index (DLQI) showed that itching, inflammation, pain, or stinging (QOL1) affected participants “a lot” or “very much” in 56.5% of cases. Embarrassment or other limitations due to skin (QOL2) were reported as “a lot” or “very much” by 54.3% of participants. Skin interference with daily activities such as shopping or public outings (QOL3) affected 46.1%, while influence on clothing choices (QOL4) was less pronounced, with only 28.7% affected “a lot” or “very much.”

Skin impact on social or leisure activities (QOL5) was reported as “a lot” or “very much” by 49.5%, whereas difficulty practicing sports (QOL6) was relatively low, affecting only 17.1%. Work or study impairment due to skin (QOL7) was reported in 53.4%, and troubles with close friends or relatives (QOL8) affected 36.9%. Skin-related difficulty in sexual life (QOL9) was uncommon, reported by 14.5%, and treatment-related problems (QOL10) affected 22.2% of participants “a lot” or “very much.”

Table 3: Quality of Life Impact patients attending at the ALERT hospital and SPMMC, Addis Ababa, Ethiopia, 2025GC

Item		No or not relevant %	A little %	A lot %	Very much %
QOL1	How much has your skin been affected during the past week because of itching, inflammation, pain, stinging	5.1	38.5	32.1	24.4
QOL2	How much embarrassment or other type of Limitation was caused by your skin during the past week	12.0	33.8	28.2	26.1
QOL3	How has your skin interfered with your activities of going shopping or sight-seeing, at home or public places during the past week	17.9	35.9	28.6	17.5
QOL4	How much has your skin influenced the clothes you regularly wear over the last week	34.6	36.8	26.1	2.6
QOL5	How much has your skin affected any of your social or leisure activities over past week	16.2	34.2	33.3	16.2
QOL6	How difficult was it for you to practice sports over the past week	73.1	9.8	14.1	3.0
QOL7	Did your skin prevent you from working or studying over the past week	19.7	26.9	34.6	18.8
QOL8	How much trouble has your skin created with your partner or any of your close friends or relatives	33.3	29.1	27.8	9.8
QOL9	How much difficulty has your skin created in your sex life over the past week	67.1	18.4	13.2	1.3
QOL10	How much trouble did your skin treatment created for you over the last week	47.4	30.3	20.9	1.3

5.4 correlation Between Variables and QOL

The correlation between sociodemographic, clinical, and treatment factors with quality of life (QOL) among chronic urticaria patients was analyzed using Spearman correlation for continuous variables and non-parametric tests (Mann-Whitney U and Kruskal-Wallis) for categorical variables.

Sociodemographic factors: Age ($\rho = -0.108$, $p = 0.100$) and monthly income ($\rho = 0.115$, $p = 0.080$) were not significantly correlated with QOL. Males reported significantly poorer QOL than females ($U = 5520.5$, $Z = -2.130$, $p = 0.033$). Marital status showed a borderline significant

correlation ($H = 7.796$, $df = 3$, $p = 0.050$), with singles and married participants tending to have higher QOL scores than divorced individuals. Educational status has significant negative correlation with QOL ($H = 12.475$, $df = 4$, $p = 0.014$), with higher education levels linked to poorer QOL.

Clinical and treatment factors: Longer disease duration ($\rho = -0.517$, $p < 0.001$) and longer follow-up in dermatology OPD ($\rho = -0.514$, $p < 0.001$) were significantly correlated with poorer QOL. There was no significant difference in QOL between patients with chronic spontaneous urticaria (CSU) and inducible urticaria (CindU) ($U = 673.0$, $Z = -1.707$, $p = 0.088$). Type of treatment was significantly correlated with QOL ($H = 12.497$, $df = 2$, $p = 0.002$), with patients on combined first- and second-generation antihistamines reporting the lowest QOL. Urticaria severity over the last 24 hours showed a strong positive correlation with QOL ($\rho = 0.834$, $p < 0.001$), indicating that higher severity is strongly correlated with poorer quality of life

Table 4: Summary of correlations Between Sociodemographic, Clinical, and Treatment Factors with Quality of Life (QOL) in Chronic Urticaria Patients (n = 234)

	Variable	Test / Correlation	Statistic	p-value
Sociodemographic Factors	Age	Spearman correlation	$\rho = -0.108$	0.100
	Gender	Mann-Whitney U	$U = 5520.5$, $Z = -2.130$	0.033
	Marital status	Kruskal-Wallis H	$H = 7.796$, $df = 3$	0.050
	Educational status	Kruskal-Wallis H	$H = 12.475$, $df = 4$	0.014
	Monthly income	Spearman correlation	$\rho = 0.115$	0.080

Clinical & Treatment Factors	Duration of disease (months)	Spearman correlation	$\rho = -0.517$	<0.001
	Duration of follow-up (months)	Spearman correlation	$\rho = -0.514$	<0.001
	Type of chronic urticaria	Mann-Whitney U	U = 673.0, Z = -1.707	0.088
	Type of treatment	Kruskal-Wallis H	H = 12.497, df = 2	0.002
	Urticaria severity (last 24 hr)	Spearman correlation	$\rho = 0.834$	<0.001

6. Discussion

This hospital-based cross-sectional study on the clinical profile and quality of life among patients with chronic Urticaria was conducted at ALERT Hospital and SPMMC, Addis Ababa, Ethiopia. A total of 234 patients were enrolled from May 2025 to December 2025.

In this study, Females constituted more than half of the participants (139, 59.4%) which is consistent with the studies conducted in Brazil, India, Iraq (3, 12, 6) where females constituted between 55% and 70% of CU patients. Median age (IQR) was 35 (28, 46.25) years indicating that chronic urticaria affects young to middle aged individuals comparable to the studies conducted in India, Brazil (12,7) where the mean age was 38, 39.8 years respectively suggesting that CU mainly affect productive age groups implicating socioeconomic impact of the disease.

The majority (225, 96.2%) had chronic spontaneous urticaria, while 9 (3.8%) had chronic inducible urticaria. Because CSU is predominantly idiopathic, explaining the disease mechanism and identifying specific triggers remain difficult in the clinical practice and patients perceive the disease as uncontrollable due to its spontaneous onset. This unpredictability contributes to emotional stress and impaired coping mechanism which consequently have considerable impact on patient's quality of life.

In this study, more than half of the participants (54.7%) had moderate to severe disease activity which was measured using urticaria activity indicating suboptimal control of the symptoms.

Similarly, multiple literatures which assessed the disease severity using UAS7 reported most patients with CU had moderate to severe disease activity with UAS7 (46.6% Korean study), (mean value of 1.04 ± 1.61 , Brazil) (ASSURE study mean value of 17.3 ± 10.49)) (18,7,14). In contrast, mild disease activity was reported with median value for UAS7 of 9 from study conducted in Portugal (10). The relatively higher disease activity seen in this study might be due to limited access for advanced management options of CU, lack of appropriate treatment escalation according to step up management of CU which is related to poor follow-up adherence of patients.

The median DLQI score was 12 (IQR: 6–17) indicating Chronic urticaria has severe impact on patient's QoL which is comparable to the studies done in Brazil, Iraq, Korea which had shown that chronic urticaria had moderate to severe impact on patient's QoL with the mean DLQI score of 10.4 ± 7.7 , 9.3 ± 4.37 , 10.2 ± 7.6 respectively. Most participants (65.9%) experienced moderate to severe impact on quality of life in this study, comparable to the finding from Indian study where 75% of the participants had poor quality of life (7,6,18). Conversely, mild impairment of CU on patient's quality of life reported from study done in Japan with mean DLQI score of 4.8 ± 5 .(21) The relatively higher degree of impairment in this study comparing to other studies might be attributed to limited access for advanced treatment, higher disease activity, variation in cultural and social perception of the disease. Additionally, late presentations due to limited access to dermatologic care and financial constraints affecting continuity of care led to irregular follow up and sub optimal treatment which may have exacerbated disease activity and impaired quality of life.

The domain indicative of greater impairment were symptoms (itching, inflammation, stinging) reported in 56.5% of the participants, followed by embarrassment due to skin condition reported in 54.3% and daily activities in 46.1% of the participants. indicating substantial physical, emotional and social impact of the disease, consistent with findings from ASSURE studies, studies done in Brazil, Portugal (14, 7, 10).

Males reported significantly poorer QOL than females ($U = 5520.5$, $Z = -2.130$, $p = 0.033$), consistent to the finding from Nepal study (8). Conversely in most of the studies, QoL was found to be more affected in women (8,18, 10). This may be explained by occupational factors as males are more engaged in outdoor activities. Additionally, differences in coping mechanism and

symptom perception may contribute to the observed gender disparity in quality-of-life impairment.

Although higher educational status is generally associated with better quality of life, in this study it showed significant negative correlation with QOL ($H = 12.475$, $df = 4$, $p = 0.014$), with higher education levels linked to poorer QOL, consistent with Portuguese, Brazilian study (10,7). This could be explained by patients with higher education are more likely to hold jobs that demand greater intellectual effort and they are more integrated perception of their illness and treatment adverse effect.

Longer disease duration ($\rho = -0.517$, $p < 0.001$) and longer follow-up in dermatology OPD ($\rho = -0.514$, $p < 0.001$) were significantly associated with poorer QOL. Conversely patients with shorter duration of follow up had poorer QoL in Brazilian study (8). Possible explanation for lower QoL in this study could be higher disease severity and disease refractoriness, prolonged exposure to symptoms, treatment adverse effect for those with long term therapy.

Type of treatment was significantly associated with QOL ($H = 12.497$, $df = 2$, $p = 0.002$), with patients on combined first- and second-generation antihistamines reporting the lowest QOL. Similarly, studies in Korea showed that patients on third line therapy who started omalizumab had poor QoL (18). This indicates that as the disease activity was not controlled, the step-up management was continued to first- and second-generation antihistamines indicating the disease severity and sedative effect of first-generation antihistamine impairing QoL.

Urticaria severity over the last 24 hours showed a strong positive correlation with QOL ($\rho = 0.834$, $p < 0.001$), indicating that higher severity is strongly associated with poorer quality of life. This finding is consistent with multiple studies conducted in India, Portugal, Korea, AWARE study (19, 10, 18, 5).

7.Limitations of the study

There are few limitations that need to be highlighted in this study: -
As Cross-sectional study design is used, it measure DLQI at one point in time which may not assess the variation in disease activity and quality of life over time

Reliance on self-reported measures to determine QoL and disease activity may introduce reporting bias

Difference in assessment periods between the instruments, with DLQI evaluating QoL over the past 7 days, while UAS measured disease activity over the past 1 day. This discrepancy may affect the accuracy of correlating disease severity with quality of life.

8.Strength of the study

The study was conducted across two centers which increase the diversity of study participants and also enhance the generalizability of the findings.

The study used standard and validated quality of life tool which enhance the reliability of the findings.

Use of appropriate analysis method.

9. Conclusion

This study demonstrates that more than half of study participants with CU have moderate to severe impairment on their QoL, with higher disease activity, longer disease duration and patients who started sedating antihistamine being associated with poorer QoL. The significant positive correlation between UAS and DLQI indicates that worsening disease severity is directly linked to decline in DLQI. These findings emphasize optimal disease control to reduce the burden of chronic urticaria on patients with QoL.

Symptoms and feeling are the most affected domain followed by embarrassment due to their skin condition and daily activity

9. Recommendations

Based on the findings of the study, the following recommendations are forwarded

- Future studies to evaluate the impact of various interventions (medications, psychosocial support) on quality of life
- Future studies to include comparative studies evaluating the burden and quality of life impairment of chronic urticaria in relation to other dermatologic diseases to better understand the extent of impairment

- Longitudinal DLQI studies to assess the response to interventions and changes on impairment of QoL
- At health institution level, adoption of clinical guidelines that include regular evaluation of disease severity and quality of life is important. Additionally, the institution should ensure the availability of advanced therapies.

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Annex I:

Information sheet

Title: Quality of life among chronic urticaria patients attending dermatology OPD in Dermatology teaching hospital, Addis Ababa

Investigator: Lidet Kebede (dermatoverereology resident)

Phone: 0910609002

Introduction: this information sheet and consent form is prepared with the aim of assessing quality of life and associated factors among CU patients in Dermatology teaching hospital, Addis Ababa

Purpose of the study: Improving quality of life among patients with CU since the disease is a debilitating and frustrating condition for the patients

Procedure: The study participants are adult patients with CU and you are selected to be one of the study participants. If you are volunteer to participate in this study, you are kindly requested to give genuine response in the interview and you will be asked questions about the basic things about you and questions that will related with your disease. It will take only few minutes.

Risks: you will never face any risk by participating in this study

Benefits: The information you give to this study is relevant in assessing quality of life and in further to have recommendations to policy makers on improving quality of life among CU patients

Confidentiality: Information about you that will be collected from this study will not have your name rather a code number assigned to it and stored in a file

Payment: You will not be provided any payment to take part in this study

Right to refusal or withdraw:. You have the full right to refuse from participating in this study and to withdraw at any time you want

Name: Lidet Kebede

Signature

Consent form

I have read or heard what is written in the information sheet and willing to participate on the study to be conducted by Lidet Kebede on quality of life among chronic urticaria patients attending dermatology OPD in Dermatovenereology teaching hospital, 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 it if felt uncomfortable.

I fully consent to participate in this study.

Participant/s Signature_____ Interviewer signature----- Date-----

Annex II: Questionnaires in English

Part 1: Socio demographic characteristics

No	Questions	Responses
1.1	Age	----- in years
1.2	Gender	1. Male 2. Females
1.3	Educational status	1. Unable to read and write 2. Grade 1-8 3. Grade 9-12 4. College and university 5. Others(specify)
1.4	Marital status	1. Single 2. Married 3. Divorced 4. Widowed
1.5	Occupation	1. Student 2. Housewife 3. Governmental employee 4. Private employee 5. Merchant 6. Farmer 7. Others (specify)

1.6	Residence	1. Urban 2. Rural
1.7	Monthly income	

Part 2 Clinical characteristics

No	Questions	Responses
2.1	Type of chronic urticaria	1. chronic spontaneous urticaria 2. chronic inducible urticaria
2.2	For chronic inducible urticaria, what things trigger the urticaria symptoms	1. pressure 2. cold 3. heat 4. sunlight 5. water 6. sweating
2.3	Duration of the disease	-----in months
2.4	Duration of follow up in dermatology OPD	-----in months
2.5	Type of treatments	1. Nonsedating h1 antihistamine (cetirizine) 2. Sedating h1 antihistamines 3. Both 1&2 4. Po steroids 5. Methotrexate 6. Omalizumab
2.6	Dose of antihistamines	1. Standard dose (cetirizine 10mg po/day) 2. higher dose (4x standard dose)
2.7	Is there angioedema	1. yes 2. no
2.8	Do you have any triggering factors for	1. drugs

	patients with CSU	2. stress 3. foods
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Part 3. Urticaria activity score

Domain	Questions	Responses
Wheal's score	3.1 how many wheals did you have in the last 24hr	0. no wheals 1. <20wheals 2. 20-50 wheals 3. > 50
Itching score	3.2 how is the intensity of the itch in last 24hr?	0. none 1. present but not troublesome 2. troublesome but does not interfere with normal daily activity or sleep 3. severe itch which interfere normal daily activities or sleep

Part 4 DLQI questionnaires

Domain	Questions	Responses
Symptoms and feeling	4.1 How much has your skin been affected during the past week because of itching, inflammation, pain, or stinging?	3. very much 2. a lot 1. a little 0. no or not relevant);
	4.2 How much embarrassment or other type of limitation was caused by your skin during the past	3. very much 2. a lot

	week?	1. a little 0. no or not relevant);
Daily activities	4.3 How has your skin interfered with your activities of going shopping or sight-seeing, at home or public places during the past week?	3. very much 2. a lot 1. a little 0. no or not relevant);
	4.4 how much has your skin influenced the clothes you regularly wear over the last week	3. very much 2. a lot 1. a little 0. no or not relevant);
Leisure	4.5 How much has your skin affected any of your social or leisure activities over past week?	3. very much 2. a lot 1. a little 0. no or not relevant);
	4.6 How difficult was it for you to practice sports over the past week?	3. very much 2. a lot 1. a little 0. no or not relevant);
Work and school	4.7 Did your skin prevent you from working or studying over the past week?	3. very much 2. a lot 1. a little 0. no or not relevant);
Personal relationships	4.8 How much trouble has your skin created with your partner or any of your close friends or relatives?	3. very much 2. a lot 1. a little 0. no or not relevant);
	4.9 How much difficulty has your skin created in your sex life over the past week?	3.very much 2. a lot 1. a little 0. no or not relevant
Treatment	4.10 How much trouble did your skin treatment	3. very much

	create for you over the last week?	2. a lot 1. a little 0. no or not relevant
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DLQI (Amharic version)

ከአጠቃላይ የቆዳ ህይወት ጥራት ጋር የተገናኙ ጥቂዎች

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

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

Annex III: Declaration form

This is to certify that the thesis is prepared by **Dr. Lidet Kebede** entitled “**Quality of life and associated factors among chronic urticaria patients attending dermatology OPD, in Dermatovenerology teaching hospital, Addis Ababa, Ethiopia**” submitted in partial fulfillment of the requirements of speciality complies with the regulations of the university and meets the accepted standards with respect to originality and quality. This thesis has not been presented for a degree in any other university, and all sources of materials used for the thesis have been duly acknowledged.

ASSURANCE OF PRINCIPAL INVESTIGATORS

I, the undersigned, declare that this postgraduate degree thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

1.Name of the student: _____Signature_____ Date. _____

APPROVAL OF THE ADVISORS

This thesis has been submitted with my approval as university advisor.

APPROVAL OF ADVISOR

Name of the first advisor: _____Signature _____ Date. _____

Name of the second advisor: _____Signature _____ Date. _____

APPROVAL OF EXAMINER

Name: _____

Signature _____ Date. _____