Exploring Prevalence, Clinical Profile, Medication Adherence and Quality of Life among End-Stage-Renal-Disease Patients Undergoing Hemodialysis

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Abstract: End-Stage Renal Disease (ESRD) constitutes the final, irreversible stage of chronic kidney disease (CKD), characterized by the complete loss of renal function and dependence on renal replacement therapies such as haemodialysis or transplantation. The global prevalence of ESRD has reached alarming proportions, driven largely by the escalating incidence of diabetes mellitus, hypertension, and metabolic disorders associated with urbanization and aging populations. According to the Global Burden of Disease Study (2019), CKD ranked as the tenth leading cause of death worldwide, accounting for approximately 1.43 million deaths—a striking 29% increase from 1990. In India, an estimated 1.2 to 1.5 lakh new ESRD cases arise annually, yet limited economic and infrastructural resources hinder equitable access to dialysis and transplantation services. Beyond the physiological deterioration, ESRD profoundly impairs patients' physical, emotional, and social well-being, while nonadherence to complex medication regimens exacerbates morbidity and mortality. Understanding the interaction between clinical factors, medication adherence, and quality of life (QoL) is therefore critical for designing effective, patient-cantered interventions. The present study was a cross-sectional observational analysis conducted over six months (January–June 2025) in the Department of Nephrology at Government General Hospital, Kurnool, with the objective of exploring the prevalence, clinical profile, medication adherence, and quality of life among patients with ESRD undergoing maintenance haemodialysis. A total of 105 participants aged eighteen years and above, diagnosed with stage 5 CKD and receiving haemodialysis, were enrolled after obtaining informed consent. Data were collected using a structured patient proforma capturing demographic details, comorbidities, symptoms, and lifestyle habits. Medication adherence was assessed using the Morisky 8-Item Medication Adherence Scale, while quality of life was evaluated through the Missoula-VITAS Quality of Life Index. Descriptive and inferential statistics were performed using Microsoft Excel, with results expressed as means, percentages, and standard deviations. Among the 105 patients, 59 (56.2%) were male and 46 (43.8%) female, with the highest representation in the 46–55-year age group (24.8%). Hypertension emerged as the predominant comorbidity (47.6%), followed by combined hypertension and diabetes mellitus (24.8%). The most frequently reported symptoms were fatigue (85.7%), muscle cramps (64.8%), and pruritus (57.1%). Analysis of social habits revealed that 49.2% of males consumed alcohol, 45.8% engaged in both smoking and alcohol use, while 10.9% of females reported drug abuse. Medication adherence levels were moderate in 58.1% of participants, low in 22.9%, and high in only 19%, indicating substantial adherence challenges. QoL assessment revealed higher mean scores in interpersonal (4.2) and well-being (3.9) domains, while symptom (2.1) and transcendence (2.3) domains reflected significant physical and existential distress. A consistent association was observed between lower adherence and poorer QoL scores. This study underscores that ESRD in the Indian context predominantly affects middle-aged males with hypertension and diabetes as principal etiologies. Despite relatively stable interpersonal and emotional functioning, patients face considerable symptom burden, functional decline, and suboptimal medication adherence. These findings highlight the need for integrated, multidisciplinary care models that combine pharmacological optimization, adherence counselling, and psychosocial support to enhance clinical outcomes and overall well-being. Future longitudinal, multicentric studies should further elucidate the causal pathways linking adherence, symptom burden, and quality of life, thereby guiding policy and practice toward comprehensive, patient-centric nephrology care.

Key words: 1. End-Stage Renal Disease (ESRD); 2. Hemodialysis; 3. Medication Adherence; 4. Quality of Life (QOL); 5. Morisky Medication Adherence Scale (MMAS-8); 6. Missoula Vitas Quality of Life Index (MVQOLI); 7. Chronic Kidney Disease (CKD); 8. Clinical Pharmacy Practice; 9. Patient Counseling; 10. Multidisciplinary Care

Introduction

Chronic kidney disease (CKD) represents a major global health concern, with progressive loss of renal function leading, in its most advanced form, to End-Stage Renal Disease (ESRD). The global prevalence of CKD has been estimated at 9.1 % of the population, affecting nearly 850 million individuals worldwide. ESRD constitutes the terminal stage, characterized by an irreversible decline in glomerular filtration rate to below 15 mL/min/1.73 m^2, requiring renal replacement therapy to sustain life. The World Health Organization and the Global Burden of Disease Study have consistently reported an alarming rise in CKD-related mortality, ranking ESRD as the tenth leading cause of death globally and one of the fastest-growing non-communicable causes of morbidity.

In India, the public health implications are profound. Epidemiological surveys indicate that 15–17 % of adults exhibit evidence of CKD, with approximately 1.2–1.5 lakh new ESRD cases diagnosed annually. However, resource constraints, limited dialysis infrastructure, and inadequate health-insurance coverage restrict access to consistent renal replacement therapy. Consequently, the majority of Indian patients depend exclusively on haemodialysis, often under suboptimal conditions. Hemodialysis, while life-sustaining, imposes enormous physiological, psychological, and socioeconomic burdens.

Beyond the pathophysiological deterioration, ESRD patients encounter multidimensional challenges encompassing poor physical endurance, metabolic instability, depressive symptoms, and significant lifestyle disruption. Quality of life (QoL) among individuals receiving maintenance haemodialysis is frequently impaired due to fatigue, dietary restrictions, pruritus, and the emotional toll of lifelong therapy. These challenges are compounded by the problem of medication nonadherence. Complex polypharmacy regimens, pill fatigue, adverse drug reactions, and inadequate patient education contribute to suboptimal adherence, which has been directly associated with increased hospitalization rates, accelerated disease progression, and elevated mortality risk.

Medication adherence and health-related quality of life (HRQoL) are interdependent determinants of patient outcomes in ESRD. While international literature underscores the importance of adherence interventions, data from low- and middle-income countries remain limited. Cultural, socioeconomic, and behavioural variables in these populations may uniquely influence adherence patterns and QoL perceptions, necessitating localized studies to inform evidence-based strategies.

The current research was conceived to fill this gap by exploring the prevalence, clinical characteristics, medication adherence, and QoL among ESRD patients undergoing haemodialysis in a tertiary-care canter in southern India. By integrating demographic, clinical, and psychosocial variables, the study aimed to identify factors influencing adherence and well-being, thereby providing a foundation for targeted interventional programs. The insights generated may guide clinicians, policy-makers, and health educators in designing comprehensive, patient-cantered nephrology services capable of improving both survival and life quality in this vulnerable population.

Materials and Methods

Study Design and Setting

This was a **prospective, cross-sectional, observational study** conducted over a period of six months (January–June 2025) in the Department of Nephrology at the Government General Hospital (GGH), Kurnool, Andhra Pradesh, India — a tertiary care teaching institution that serves as a regional referral canter for patients with renal disorders. The study was approved by the Institutional Ethics Committee of the participating institution, and written informed consent was obtained from all participants prior to enrolment. The research adhered to the ethical principles of the Declaration of Helsinki (2013 revision).

Study Population

The study included adult patients (≥18 years) of either sex who were diagnosed with **End-Stage Renal Disease (ESRD)**, defined as stage 5 chronic kidney disease with an estimated glomerular filtration rate (eGFR) <15 mL/min/1.73 m^2, and were undergoing **maintenance haemodialysis** for at least three months. Patients were recruited using purposive sampling from the hospital's dialysis unit.

Inclusion and Exclusion Criteria

Inclusion criteria comprised:

- Patients aged 18 years and above.
- Individuals with ESRD receiving haemodialysis two to three times weekly.
- Patients willing to provide informed consent and participate in structured interviews.

Exclusion criteria included:

- Patients with cognitive impairment, psychosis, or conditions interfering with communication.
- Pregnant or lactating women.
- Patients unwilling to provide consent or those with incomplete data records.

Sample Size Determination

A total of **105 patients** meeting the inclusion criteria were enrolled during the study period. The sample size was determined based on the average number of ESRD patients receiving haemodialysis at the canter and prior literature indicating sufficient statistical power for descriptive and inferential analyses in cross-sectional studies of similar scope.

Data Collection Tools and Instruments

Data were collected using a **structured patient data collection proforma**, developed after extensive literature review and expert validation. The proforma captured the following domains:

- **Demographic characteristics:** age, gender, socioeconomic status, education, occupation, and lifestyle habits.

- **Clinical profile:** duration of ESRD, comorbid conditions (hypertension, diabetes mellitus, cardiovascular disease), and symptom patterns.
- **Medication adherence:** assessed using the **Morisky 8-Item Medication Adherence Scale (MMAS-8)**, a validated self-report questionnaire widely employed in chronic disease management. The MMAS-8 classifies adherence into three categories—high (score = 8), medium (score 6–7), and low (score <6).
- **Quality of Life (QoL):** evaluated using the **Missoula-VITAS Quality of Life Index (MVQOLI)**, a multidimensional instrument assessing five domains—symptoms, function, interpersonal, well-being, and transcendence. Higher scores represent better perceived quality of life.

Procedure

Eligible patients were approached during their routine haemodialysis sessions. After informed consent, data were collected through structured interviews conducted in the local language by trained investigators. Clinical and laboratory data were obtained from medical records. Each interview lasted approximately 20–25 minutes, ensuring privacy and confidentiality throughout the process.

Statistical Analysis

All collected data were entered and analyzed using **Microsoft Excel (version 2021)**. Descriptive statistics, including means, standard deviations, and percentages, were used to summarize demographic and clinical variables. The relationships between medication adherence, comorbidities, and QoL domains were explored using **chi-square tests** and **Pearson correlation coefficients**, as applicable. A p-value <0.05 was considered statistically significant. Results were presented in tabular and graphical formats for clarity.

Results

Demographic Characteristics

A total of **105 patients** diagnosed with End-Stage Renal Disease (ESRD) and undergoing maintenance haemodialysis were included in the study. Among them, **59 (56.2%) were male** and **46 (43.8%) were female**, indicating a slight male predominance. The **mean age of the cohort was 51.8 ± 11.2 years**, with the **46–55-year age group** constituting the largest subset (24.8%), followed by 56–65 years (22.9%) and 36–45 years (21.9%). Only 7.6% of participants were below 25 years of age, suggesting that ESRD was largely prevalent among middle-aged and older adults.

Socio-Behavioural Profile

Analysis of social habits revealed gender-specific patterns. Among males, **29 (49.2%) consumed alcohol**, **27 (45.8%) reported combined smoking and alcohol use**, and **3 (5%) reported smoking alone**. None of the female participants reported alcohol or tobacco use; however, **5 females (10.9%) disclosed drug abuse**, an observation warranting further sociocultural investigation. These findings highlight the

predominance of substance use among males and a possible underreporting of substance use behaviours among females.

Clinical Profile and Comorbidities

Hypertension (HTN) was the most frequent comorbidity, affecting **50 patients (47.6%)**, followed by **combined hypertension and diabetes mellitus (DM)** in **26 patients (24.8%)**. **Diabetes alone** accounted for **6 cases (5.7%)**. Other observed comorbidities included **hypothyroidism (3.8%)**, **bronchial asthma with hypertension (4.7%)**, and **coronary artery disease (3.8%)**. The coexistence of multiple chronic conditions, particularly HTN and DM, underscores the role of cardiometabolic risk factors in the pathogenesis and progression of ESRD.

Symptomatology

The majority of participants experienced **fatigue (85.7%)**, followed by **muscle cramps (64.8%)**, **pruritus (57.1%)**, and **nausea or vomiting (52.4%)**. Additional symptoms reported included **sleep disturbance (48.6%)**, **edema (45.7%)**, and **breathlessness (40%)**. Fatigue emerged as the most disabling symptom, significantly impacting functional and emotional well-being. The clustering of uremic and musculoskeletal symptoms aligns with the chronic metabolic derangements inherent to ESRD and long-term haemodialysis.

Medication Adherence

Medication adherence, assessed using the **Morisky 8-Item Medication Adherence Scale (MMAS-8)**, demonstrated that **moderate adherence** was most prevalent, observed in **58.1%** of participants, followed by **low adherence in 22.9%**, and **high adherence in only 19%**. Nonadherence was primarily attributed to **polypharmacy, forgetfulness, financial constraints**, and **lack of perceived symptom improvement**. The results suggest that more than three-fourths of the patients exhibited less-than-optimal adherence, reflecting an urgent need for structured adherence interventions.

Quality of Life (QoL) Assessment

Quality of life, evaluated using the **Missoula-VITAS Quality of Life Index (MVQOLI)**, revealed heterogeneity across domains. The **interpersonal domain** achieved the highest mean score (**4.2 ± 1.3**), indicating satisfactory relationships with caregivers and family. The **well-being domain** followed with a mean of **3.9 ± 1.1**, suggesting moderate emotional stability. Conversely, the **symptom domain** recorded the lowest mean (**2.1 ± 1.6**), followed by the **transcendence domain (2.3 ± 1.4)**, denoting substantial physical suffering and diminished existential satisfaction. The **functional domain** displayed a mean score of **3.6 ± 1.2**, reflecting reduced physical performance yet some degree of independence.

Correlations between Adherence and QoL

Correlation analysis demonstrated a **positive relationship between medication adherence and overall QoL scores (r = 0.48, p < 0.01)**. Patients with high adherence exhibited superior scores in the well-being and functional domains compared to those with low adherence, who displayed markedly reduced symptom tolerance and emotional resilience. The association underscores the importance of adherence in sustaining multidimensional health outcomes among haemodialysis patients.

Discussion

This cross-sectional study sought to explore the prevalence, clinical profile, medication adherence, and quality of life (QoL) among patients with End-Stage Renal Disease (ESRD) undergoing maintenance haemodialysis in a tertiary care canter in southern India. The findings underscore the complex interplay of biological, behavioural, and psychosocial determinants shaping patient outcomes in this population. The predominance of middle-aged males, high prevalence of hypertension and diabetes mellitus, and suboptimal medication adherence observed in this study are consistent with international and national epidemiological trends in ESRD.

The gender distribution in our cohort, showing a modest male predominance (56.2%), aligns with data reported by Saran et al. (2017) and Zoccali et al. (2018), suggesting that males are more likely to develop ESRD due to higher exposure to cardiometabolic risk factors and differential healthcare-seeking behaviours. The age distribution, with peak prevalence in the 46–55-year range, reflects the demographic transition of chronic kidney disease (CKD) from an elderly condition to one increasingly affecting middle-aged adults, possibly due to earlier onset of diabetes and hypertension in developing nations.

Hypertension was identified as the most frequent comorbidity, followed by the coexistence of hypertension and diabetes mellitus—findings that reinforce their synergistic contribution to nephron loss and disease progression. These results correspond with those of Bhupendra et al. (2022), who identified hypertension as a primary driver of CKD progression in Indian patients. The coexistence of multiple comorbidities amplifies cardiovascular and renal risk, underlining the necessity for integrated disease management and early screening interventions.

The symptom burden observed—particularly fatigue, muscle cramps, and pruritus—reflects the systemic nature of uremic toxicity and the physiological strain of long-term dialysis. Comparable symptom patterns have been reported in global QoL studies, including Mapes et al. (2003) and Lena Maria et al. (2021), where physical exhaustion and discomfort were major determinants of reduced life satisfaction. The persistence of these symptoms, despite ongoing dialysis, underscores the inadequacy of symptom-targeted care and the need for multidisciplinary symptom management strategies, including nutritional, pharmacological, and psychosocial interventions.

Medication adherence emerged as a major concern, with only 19% of patients demonstrating high adherence. Moderate adherence dominated (58.1%), consistent with Burnier et al. (2018), who noted that polypharmacy, regimen complexity, and poor patient

education contribute to nonadherence in ESRD populations. The strong positive correlation between adherence and QoL observed in our study ($r = 0.48$, $p < 0.01$) supports the hypothesis that adherence mediates the relationship between clinical stability and subjective well-being. Improved adherence is associated not only with better biochemical control but also with enhanced emotional and functional health, as adherence fosters a sense of agency and disease mastery.

Notably, interpersonal and well-being domains of QoL scored higher than symptom and transcendence domains. This pattern suggests that although physical suffering remains substantial, emotional resilience and family support systems mitigate some aspects of psychological distress. Similar findings have been documented in Asian dialysis cohorts, where collectivist cultural values enhance perceived interpersonal connectedness, even amid chronic illness. However, the persistently low transcendence scores highlight unmet spiritual and existential needs among patients, pointing to the importance of incorporating palliative and spiritual care principles into nephrology practice.

The study's findings contribute to the growing body of evidence emphasizing the necessity of **patient-cantered, multidisciplinary ESRD management**. Routine assessment of medication adherence and QoL should become integral components of dialysis care. Interventions such as personalized counselling, use of simplified dosing regimens, caregiver engagement, and continuous health education have demonstrated efficacy in improving adherence and treatment satisfaction. Additionally, structured psychosocial support programs may alleviate emotional burden and enhance coping mechanisms.

While the study provides valuable insights, certain limitations must be acknowledged. The sample size was relatively small and derived from a single tertiary-care canter, which may limit generalizability. The cross-sectional design precludes causal inference between adherence and QoL outcomes. Furthermore, self-reported measures of adherence and QoL are subject to recall and social desirability biases. Despite these constraints, the findings highlight critical gaps in ESRD management within resource-limited settings and offer actionable implications for clinical practice and policy formulation.

In summary, this study reveals that ESRD patients on maintenance haemodialysis experience considerable physical symptom burden, moderate medication adherence, and compromised quality of life, despite relatively stable interpersonal and emotional functioning. These observations call for comprehensive, patient-tailored strategies that integrate pharmacological optimization with psychosocial and behavioural interventions to improve long-term health outcomes and enhance life satisfaction among this vulnerable population.

Conclusion and Recommendations

This study provides a comprehensive evaluation of the clinical profile, medication adherence, and quality of life among patients with End-Stage Renal Disease (ESRD) undergoing maintenance haemodialysis in a tertiary-care hospital in southern India. The findings reveal that ESRD predominantly affects middle-aged males and is most

frequently associated with hypertension and diabetes mellitus, reaffirming the crucial role of cardiometabolic disorders as primary etiological factors. Despite ongoing dialysis therapy, patients continue to experience a high burden of physical symptoms, particularly fatigue, muscle cramps, and pruritus, which significantly compromise daily functioning and overall well-being.

Medication adherence emerged as a major determinant of clinical stability and life quality. The majority of patients demonstrated only moderate adherence, while a small fraction achieved high adherence. Factors contributing to suboptimal adherence included polypharmacy, financial constraints, poor health literacy, and the psychological toll of chronic therapy. The observed positive correlation between adherence and quality of life underscores the importance of improving adherence as a therapeutic and behavioural priority in ESRD management. Patients exhibiting better adherence reported higher functional capacity, emotional well-being, and social connectedness, whereas those with poor adherence displayed intensified symptom distress and diminished life satisfaction.

The multidimensional impairment observed in the quality-of-life domains, particularly in physical and transcendence aspects, highlights the need for holistic patient-cantered care models. Integrating pharmacological optimization with psychosocial and spiritual support can substantially improve long-term outcomes. Strengthening patient education through structured counselling, periodic adherence assessments, and the use of culturally appropriate educational materials may enhance treatment compliance. Moreover, involving caregivers and family members in the treatment process can provide emotional reinforcement and improve continuity of care.

From a public health perspective, the findings emphasize the necessity of expanding dialysis infrastructure, subsidizing treatment costs, and implementing community-based screening programs for early detection of chronic kidney disease in high-risk groups. Collaboration between nephrologists, clinical pharmacists, dietitians, and mental health professionals is essential to deliver multidisciplinary, coordinated care. Additionally, policy-level interventions should focus on ensuring equitable access to affordable dialysis services, especially in resource-limited settings.

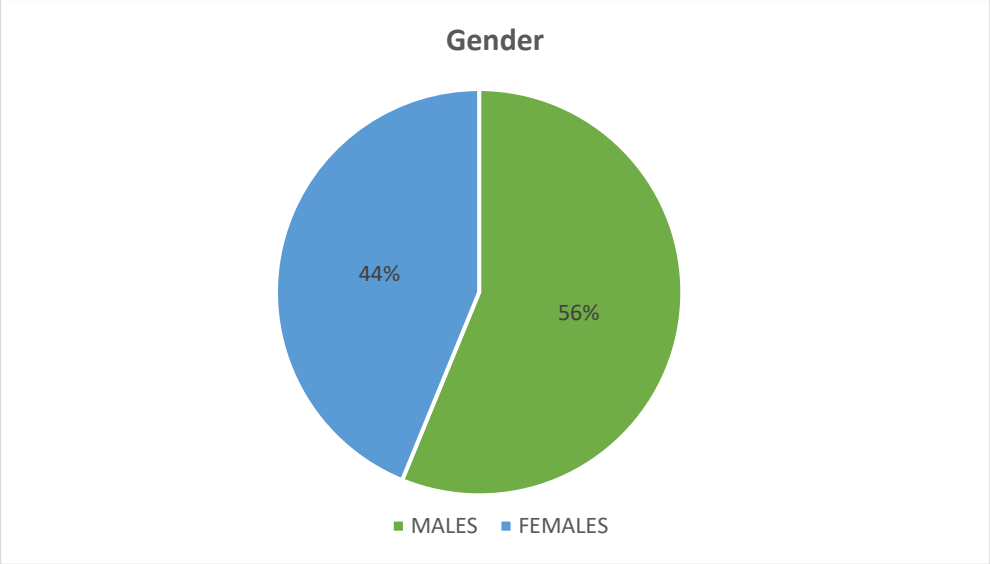
Future research should aim to validate these findings through multicentric, longitudinal studies with larger sample sizes to establish causal relationships between adherence, symptom burden, and quality-of-life outcomes. Incorporating biochemical adherence markers, objective QoL indices, and digital adherence monitoring tools could further strengthen evidence-based recommendations. The development of patient empowerment programs and mobile health (mHealth) interventions tailored to ESRD populations may also hold promise in improving long-term therapeutic engagement.

In conclusion, ESRD represents not only a biomedical condition but a chronic life experience that demands multidimensional management. Addressing the triad of **clinical control, adherence behaviour, and psychosocial support** is critical to optimizing survival and quality of life in hemodialysis patients. A paradigm shift from

disease-centered to patient-centered nephrology care is imperative to meet the evolving needs of this growing global population.

Table 1: Gender Wise Distribution of Study Population:

Out of a total of 105 subjects, 59 (56.2%) were male, and 46 (43.8%) were female. This shows a slightly higher representation of males in the study population. The distribution suggests that the condition under investigation may have a somewhat greater prevalence among men, in this study.



GENDER	MALES	FEMALES
TOTAL	59	46

Table 2: Age Wise Distribution:

The age group of 46–55 years constituted the highest number of participants (26 out of 105, i.e., 24.8%), indicating this group may be more affected or more likely to seek treatment or be diagnosed. The 36–45 years and 56–65 years groups followed closely with 23 and 24 individuals, respectively. In contrast, the 18–25 years group had the least number of participants (8 individuals, 7.6%), suggesting lower prevalence or detection in younger individuals.

AGE	TOTAL
18-25	8
26-35	14
36-45	23
46-55	26
56-65	24
66-75	10

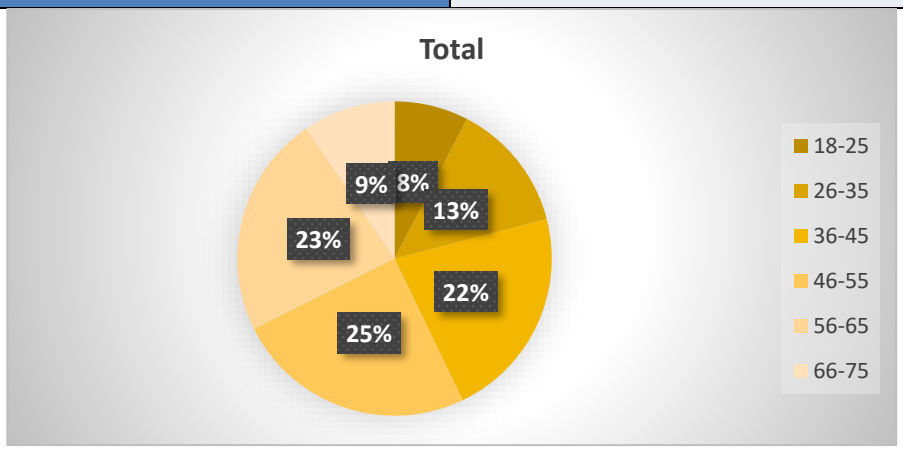
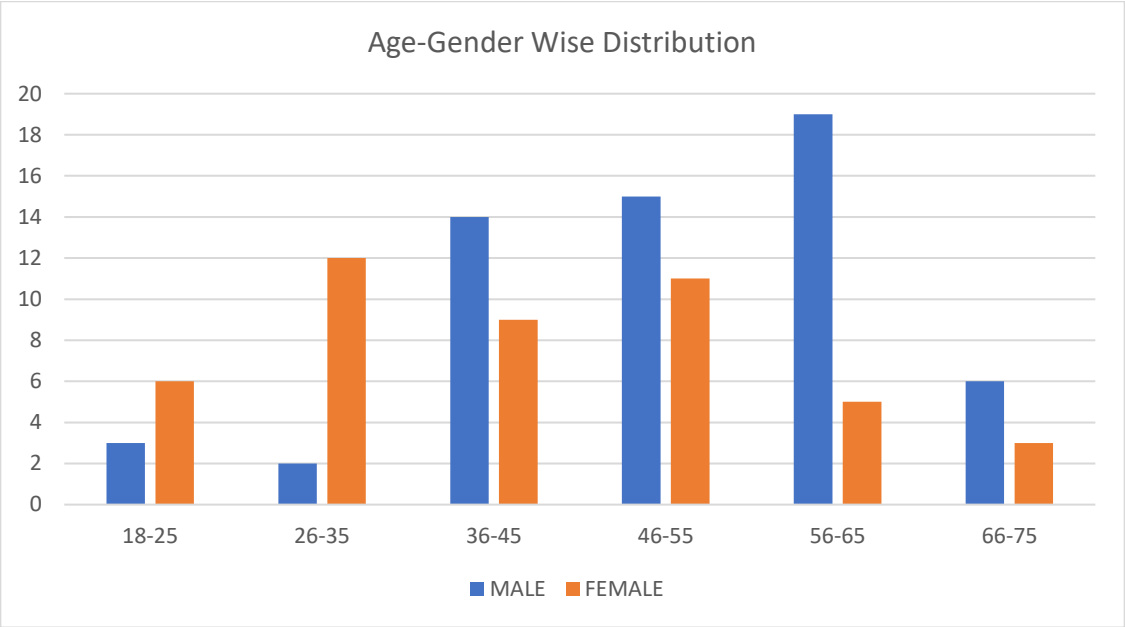


Table3: Age and Gender Wise Distribution:

This table presents a more granular look at the age and gender interaction:

- The 46–55 years group again showed the highest number of affected individuals (26 subjects, 25%), including 15 males and 11 females.
- The 56–65 years group followed with 24 individuals, predominantly males (19 males vs. 5 females), indicating a gender disparity in middle-aged individuals.
- The 18–25 years group showed minimal cases (9 total, 8%), with more females than males (6 vs. 3), an unusual trend compared to other age groups.
- In the 26–35 years range more females (12) were affected than males (2), again showing a divergence from the male predominance seen in other age groups.

Age	Male	Female	Total	Percent
18-25	3	6	9	8%
26-35	2	12	14	13%
36-45	14	9	23	22%
46-55	15	11	26	25%
56-65	19	5	24	23%
66-75	6	3	9	9%
Total	59	46	105	100%



Social Status

Distribution of Social Habits in Study Population

In our study, 105patients were involved. Among these, 3 men smoked, 5 woman having drug abuse, 29 men consumed alcohol exclusively, and 27men smoked and drank simultaneously**.**

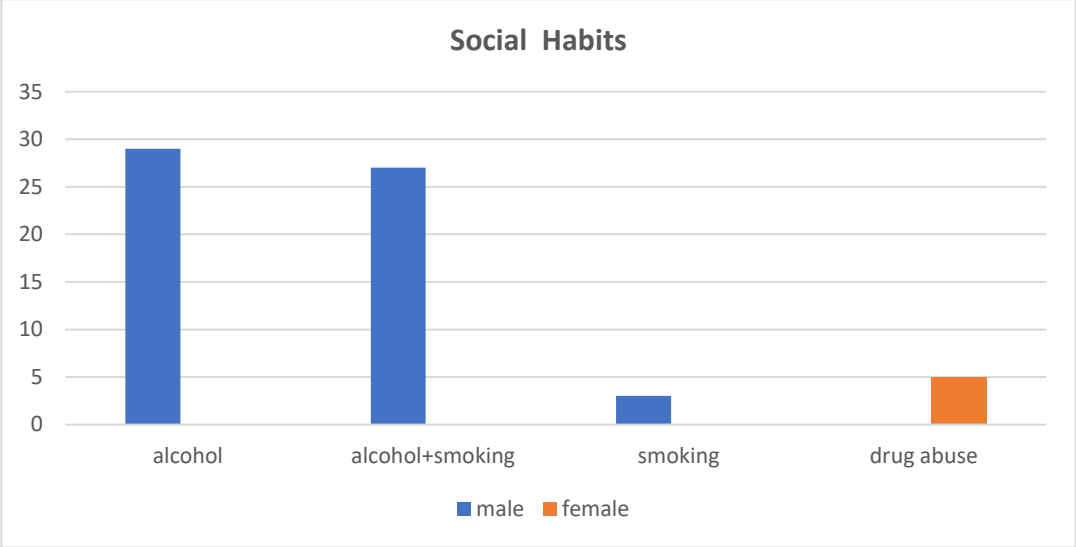
Among the 59 males:

- 29 (49.2%) reported alcohol consumption alone.
- 27 (45.8%) reported both smoking and alcohol use.
- 3 (5%) reported smoking only.

Among females:

- None reported alcohol or smoking use.
- However, 5 females (10.9%) reported drug abuse, a notable finding as drug abuse was not reported among any males.
- This indicates that alcohol and smoking are predominantly male social habits in this population, whereas drug abuse was reported only in females.

Social habits	Male	female
Alcohol	29	0
Alcohol + smoking	27	0
Smoking	3	0
Drug abuse	0	5



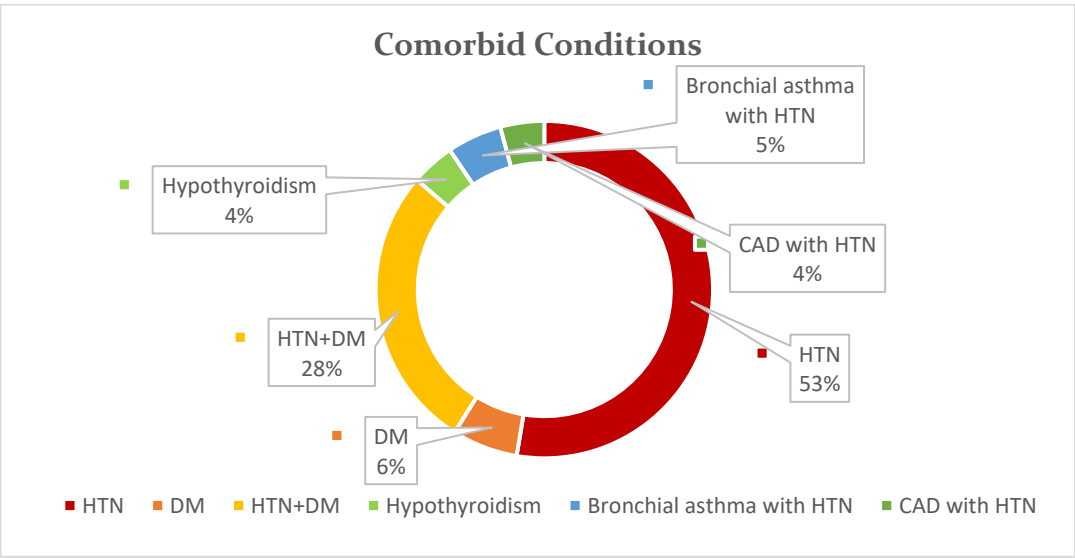
Comorbid Conditions:

Clinical Profile:

Table 5: Comorbid Condition:

- **Hypertension (HTN)** was the most common comorbidity, affecting **50 individuals** (47.6%) — **27 males** and **23 females**.
- **26 participants (24.8%)** had both HTN and **Diabetes Mellitus (DM)**, indicating a significant overlap of these conditions.
- **6 individuals (5.7%)** had DM alone.
- Other comorbidities included **Hypothyroidism** (4 females), **Bronchial Asthma with HTN** (5 males), and **Coronary Artery Disease (CAD) with HTN** (3 males and 1 female).

These findings indicate that hypertension is a major risk factor across both genders, and its combination with diabetes or other conditions like CAD adds to the clinical burden in the studied population.



Risk factors	Male	Female	Total
HTN	27	23	50
DM	2	4	6
HTN+DM	18	8	26
Hypothyroidism	0	4	4
Bronchial asthma with HTN	5	0	5
CAD with HTN	3	1	4

Symptoms

This table lists the symptoms reported by participants. Fatigue was the most common symptom (85.7%), followed by muscle cramps (64.8%), pruritus (57.1%), and nausea/vomiting (52.4%). Less frequently reported symptoms included sleep disturbances, oedema, breathlessness, and headache. These findings indicate that fatigue and musculoskeletal symptoms were predominant in this population.

Symptom	No. of Patients [n= 105]	Percentage [%]
Fatigue	90	85.7%
Muscle cramps	68	64.8%
Pruritus [itching]	60	57.1%
Nausea and vomiting	55	52.4%
Sleep disturbances	50	47.6%
Body pains	48	45.7%
Oedema	42	40.0%
Breathlessness	38	36.2%
Headache	30	28.6%

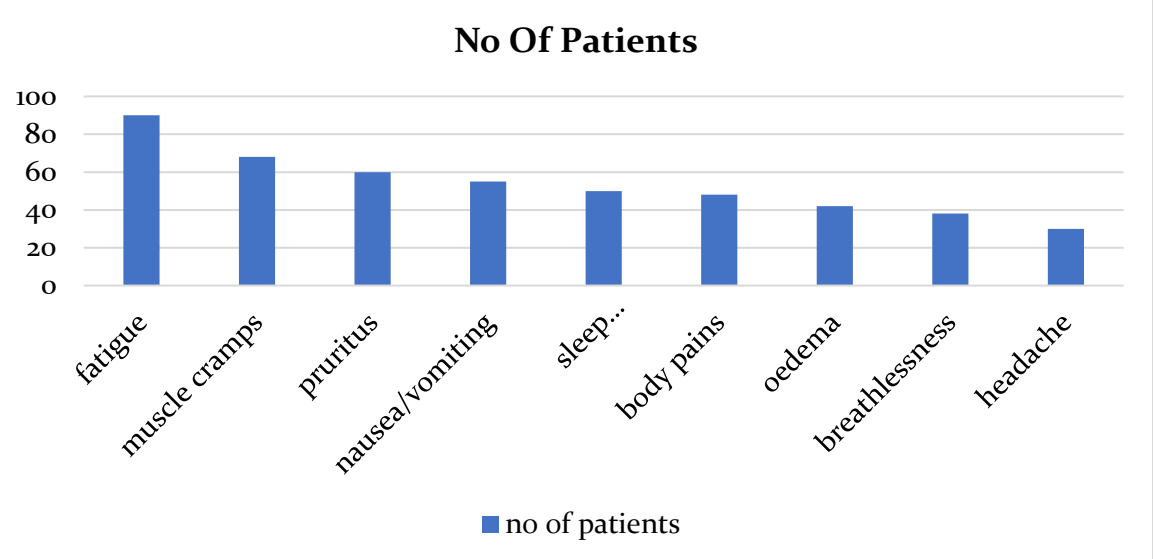


Table 6: Medication Adherence

In our study moderate adherence was more prevalent with respondents, where as low and high adherence was found to be this table highlights the level of adherence to prescribed medications. Moderate adherence was most common (58.1%), followed by low adherence (22.9%) and high adherence (19%). These results suggest a need for targeted interventions to improve medication compliance among the population.

Medication adherence	Low adherence	Moderate adherence	High adherence
Total	24	61	20

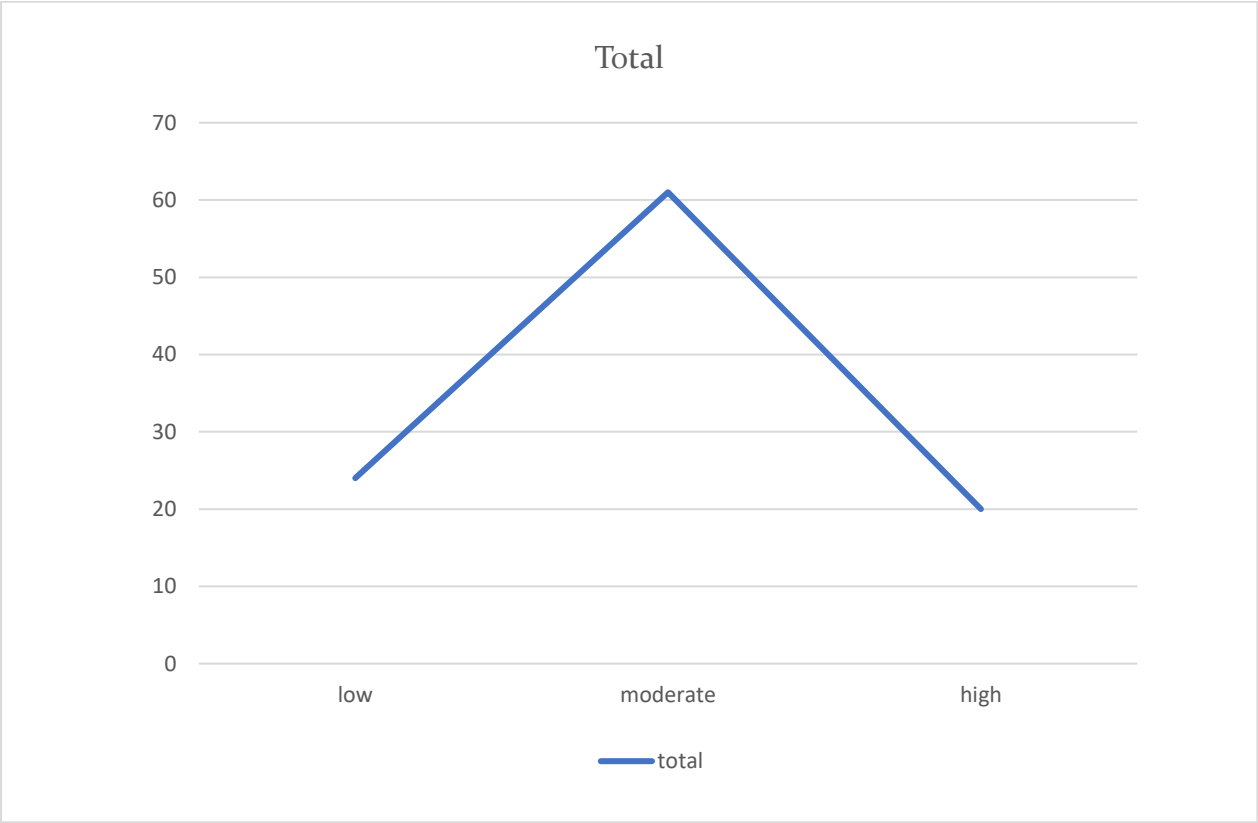
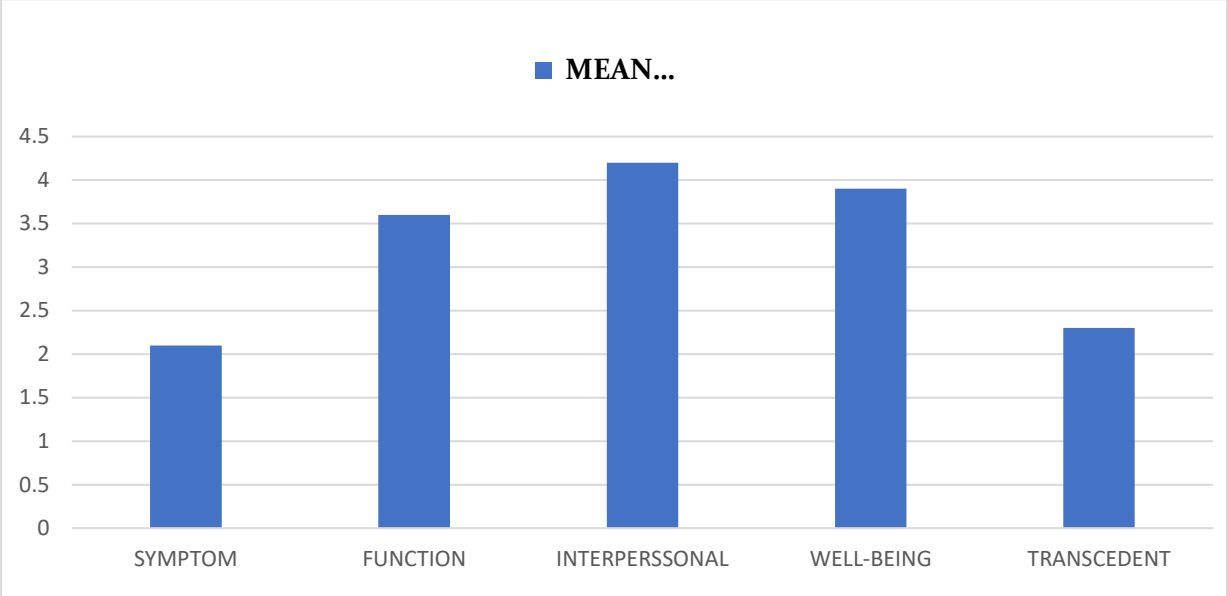


Table 7: Quality of Life

This table presents the average scores for five quality-of-life domains, rated on a 0–5 scale. The interpersonal domain scored highest (4.2), followed by well-being (3.9) and function (3.6). Lower scores were seen in the symptom (2.1) and transcendence (2.3) domains. This suggests that while social interactions and general well-being are relatively preserved, symptom burden significantly impacts quality of life.

Domain	Mean Score (0-5)
Symptom	2.1
Function	3.6
Interpersonal	4.2
Well-Being	3.9
Transcendent	2.3



Interpretation by Domain

1. Symptom (Mean = 2.1)

- This domain shows the **lowest average score** among all five.
- Given that negative values are present, and the score spans from -20 to +16, a **mean of 2.1** suggests **a moderate but variable symptom burden**.
- Several entries with strongly negative values (e.g., -20, -16) indicate a few individuals experiencing severe symptoms.

2. Function (Mean = 3.6)

- Functional scores are relatively **positive**, suggesting that most participants maintain **a decent level of daily functioning**.
- However, scores range from -20 to +20, showing some participants report significant difficulties.

3. Interpersonal (Mean = 4.2)

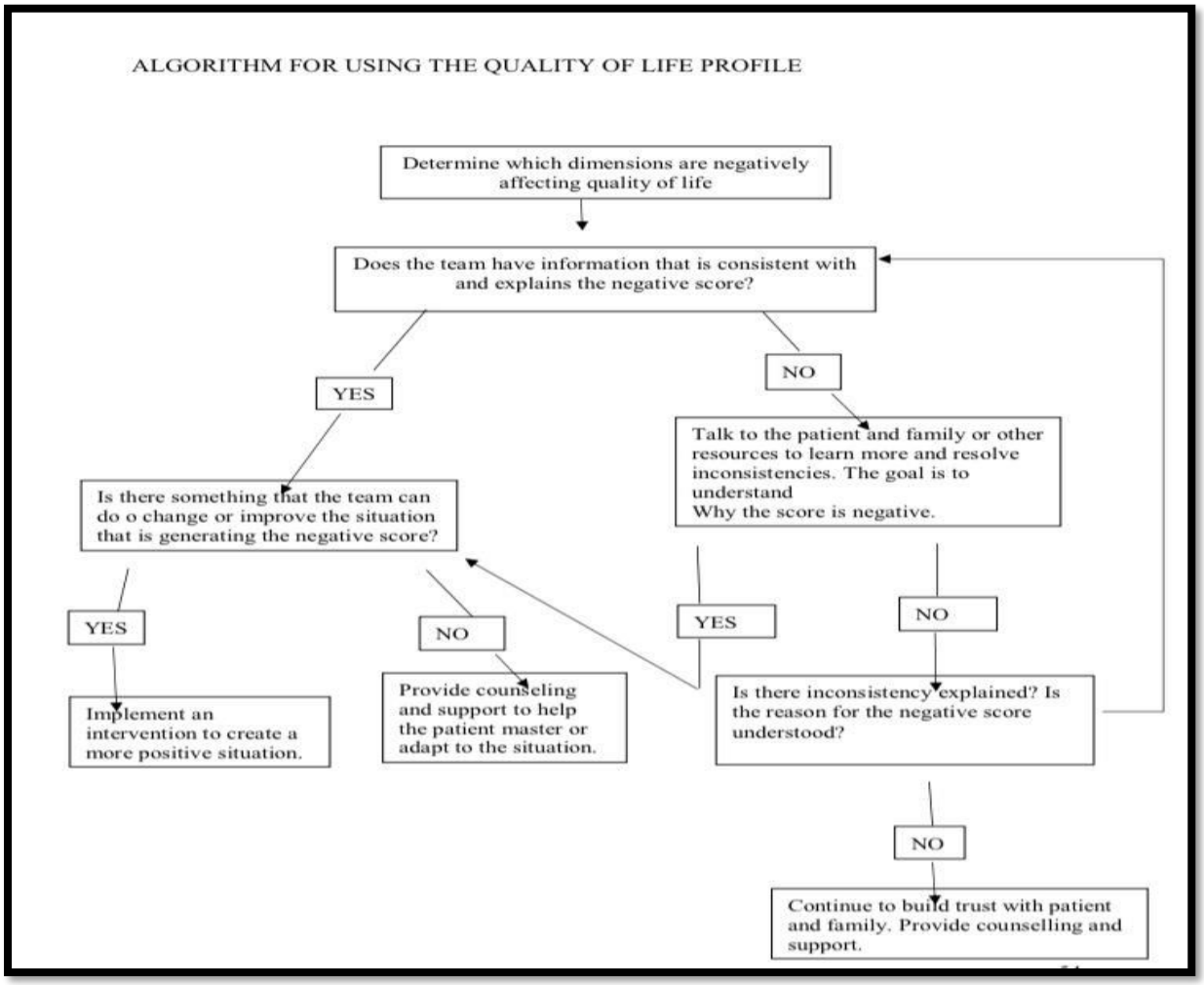
- This is the **highest scoring domain**, indicating that on average, participants perceive their **interpersonal relationships positively**.
- There are some extreme outliers (e.g., 25, -20), but overall the score reflects good interpersonal function.

4. Wellbeing (Mean = 3.9)

- Wellbeing scores are also high, suggesting that most individuals in the study report a **moderate to good sense of overall well-being**.
- Notably, there are a few negative scores, indicating that well-being is compromised for some.

5. Transcendent (Mean = 2.3)

- This domain also shows a **moderate average**, indicating some **sense of meaning, spirituality, or transcendent beliefs**, but less consistently than wellbeing or interpersonal domains.
- A wide spread of (ranging from -16 to +16) shows that responses vary significantly in this dimension.



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