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A Retrospective Study In Quality Of Life In Diabetic Foot Ulcer Patients

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Abstract
Background: *Diabetic foot ulcers (DFUs) are a significant outcome of diabetes mellitus, affecting over 15% of individuals with diabetes during their lifetime. DFUs significantly impairs a patient's overall quality of life (QoL) by compromising their physical and mental health, social functioning, and financial stability.*
Aim: *This study aims in assessing the overall quality of life in diabetic foot ulcer patient, identifying most affected domain using multidimensional approach.*
Methods: *This is a Retrospective, Cross-Sectional study in which total 50 patients were participated, those who are clinically diagnosed as type 2 Diabetes mellitus with diabetic foot ulcers in prolonged treatment. Data were collected from hospital records and assessed using WHOQOL-BREF questionnaire which includes four QoL domains: Physical Health, Psychological Well-being, Social Relationships, Environmental/Financial Impact. Domain score was analyzed to assess impairments physical health, daily activities, psychological well-being, and financial/social impact.*
Results: *DFU patients showed significant impairments across all domains. The mean physical health score was 2.95 ± 0.89, indicating pain, reduced mobility, and fatigue. Daily activity limitations averaged 2.05 ± 1.31, with many patients' reporting difficulty in walking, sleeping, or personal care. Financial stress was notable (2.22 ± 1.26), with patients citing treatment costs and income loss. Social isolation was high (2.5 ± 1.47), driven by stigma and mobility restrictions. Psychological distress, including anxiety and depressive symptoms, was frequently observed, particularly among those with chronic ulcers or prior amputations.*
Conclusion: *DFUs drastically reduce the quality of life for affected patients, not only through physical disability but also through emotional, social, and economic consequences. These findings underscore the urgent need for integrated, patient-centred care models that address both clinical and psychosocial needs. Early intervention, psychological counselling, financial support, and community awareness can play vital roles in improving outcomes and overall well-being for DFU patients.*
Keywords: *Diabetic foot ulcer, Quality of Life, Complications, Outcomes*

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I. Introduction

The presence of Diabetes Mellitus (DM) shows increased risk of many complications such as cardiovascular diseases, peripheral vascular diseases, stroke, neuropathy, renal failure, retinopathy, blindness, amputations etc. [1] Drugs (Oral Hypoglycemic Agents –OHA's) are used primarily to save lives and alleviate symptoms. Secondary aims are to prevent long-term diabetic complications and, by eliminating various risk factors, to increase longevity. [2] It is estimated that 366 million people had DM in 2011; by 2030 this would have risen to 552 million. The number of people with type 2 DM is increasing in every country with 80% of people with DM living in low - and middle-income countries. [3] The prognosis of people with diabetes mellitus

remains poor due to the changes in microvascular and macrovascular circulation that occurs with poor glycemic control. [4,5] Patients with diabetes already have compromised health-related quality of life (HRQoL), which is further deteriorated by the presence of foot ulcers. [6] Poorly managed diabetes can lead to severe and life-threatening complications, significantly affecting patients' health outcomes and quality of life. Among the various complications of diabetes, diabetic foot ulcer (DFU) stands out as one of the most serious and disabling long-term outcomes.

Diabetic foot ulcers (DFUs) are one of the most serious complications of diabetes mellitus and are often difficult to heal, particularly in the presence of comorbid conditions. Hypertension (HTN), cardiovascular diseases like coronary artery disease (CAD), renal dysfunction, peripheral neuropathy, and diabetic retinopathy are commonly associated with delayed wound healing in DFU patients. These comorbidities negatively impact microvascular and macrovascular circulation, immune function, and tissue repair mechanisms. As a result, these patients often experience prolonged healing times, increased risk of infection, and higher rates of ulcer recurrence and amputation. Foot ulcers in patients with diabetes may usually be classified either as ischemic, when the major cause is impaired blood flow that often results from atherosclerotic vascular disease, or as neuropathic, when the principal cause is peripheral neuropathy. Diabetic peripheral neuropathy is present in at least 30–50% of patients with diabetes (Shaw & Zimmet, 1999). Although pure neuropathic or ischemic ulcers exist, most ulcers have a mixed etiology and are termed neuroischemic. Infection is usually the consequence rather than the cause of foot ulcers and can cause substantial delay in healing. [7] The presence of DFUs can result in permanent disability and more often amputations related to infection. [8,9] In total, it is estimated that 15% of patients with diabetes will suffer from DFU during their lifetime. [10] Although accurate figures are difficult to obtain for the prevalence of DFU, the prevalence of this complication ranges from 4%-27%. [11-13]

DFU can lead to infection, gangrene, amputation, and even death, if care is not provided. [14] Recurrence of DFU's also poses a problem with recurrence occurring in 39% of people in the first year and up to 18% and 12.8% in the second and third year, respectively. In India, the prevalence of diabetic foot ulcers varies between 3% and 14%, with factors such as barefoot walking, inadequate footwear, and limited awareness about foot care contributing significantly to this burden, negatively impacting psychological, social, and economic aspects of life. Aggravation of DFU in India is further compounded by illiteracy, low socioeconomic status, inappropriate footwear, the practice of walking bare foot, lack of trained health professionals, near absence of patient counselling and ignorance in diabetic foot care. [15] Diabetic patients require education on daily foot care, awareness about issues that increase ulcer risk and when they should seek medical attention. There is reasonable evidence to prove that patient education improves compliance and outcomes in DFUs. [16] DFU is responsible for substantial emotional and physical distress as well as productivity and financial losses that lower the quality of life. [17,18] DFUs have a major negative effect on health-related quality of life (HRQoL). [19–22] A few studies indicate that day to day experiences of DFU patients without amputation may be even poorer than those who have undergone amputation. [23]

II. Materials & Methods

This study was designed as a retrospective cross-sectional observational study to evaluate psychosocial changes in patients with diabetic foot ulcers (DFUs) using the WHOQOL-BREF questionnaire tool. The study was conducted at a single tertiary care hospital, Chennai, India, over a retrospective review period from February 2022 to March 2025. Data were obtained from hospital records, including case sheets, follow-up notes, and quality-of-life survey responses. The study included 50 patients diagnosed with Type 2 Diabetes Mellitus complicated by foot ulcers, who had attended the General Surgery or Plastic and Reconstructive Surgery outpatient/inpatient services.

The inclusion criteria included were age ≥ 18 years and diagnosis of DFU confirmed by clinical evaluation. Patients with active psychiatric illness unrelated to diabetes Incomplete or missing psychosocial data were excluded from the study. A structured WHOQOL-BREF questionnaire was used to assess the quality of life across four domains: Physical Health, Psychological Health, Social Relationships & Environmental/Financial Impact. Each domain was scored using a 5-point Likert scale, where responses such as 'Always', 'Mostly', 'Moderately', 'A little', and 'Not at all' were quantified (1–5 scale).

III. Results

Fig. 1 - Age Distribution

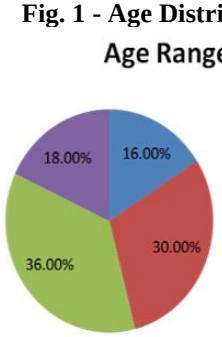
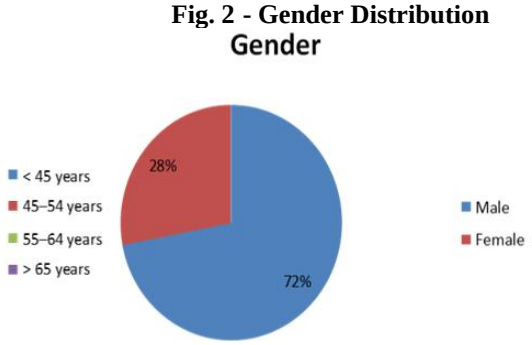


Fig. 2 - Gender Distribution



In Figure 1, the study population was categorized into four age groups. A majority (36%) of the patients (18) were in the age range of 55–64 years, followed by 30% (15 patients) in the 45–54 years group. Patients aged over 65 years accounted for 18% (9 patients), while those under 45 years constituted the smallest group at 16% (8 patients). This distribution indicates that diabetic foot ulcers are more prevalent in middle-aged and older adults.

In Figure 2, out of the total 50 patients, 72% (36 patients) were male and 28% (14 patients) were female. This suggests a higher occurrence of diabetic foot ulcers in the male population, which may be due to differences in occupation, footwear habits, or healthcare-seeking behavior.

Fig. 3 - Duration Of Diabetes

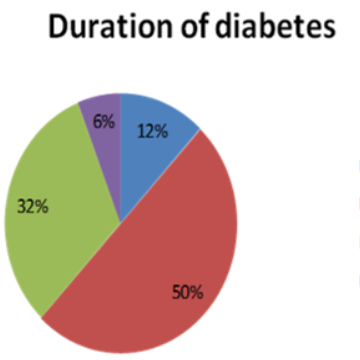


Fig. 4 - Treatment For Diabetes

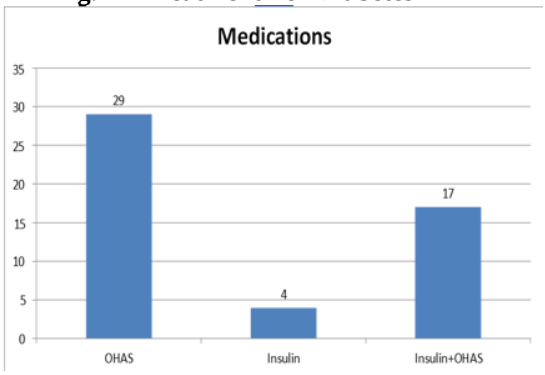
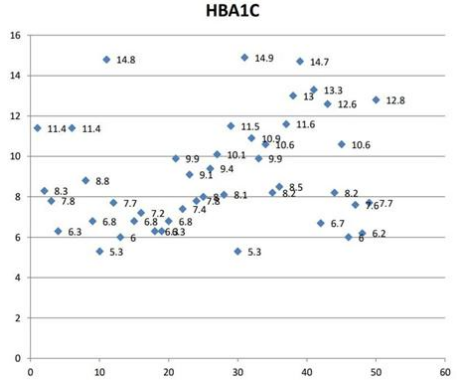


Figure 3 shows the duration of diabetes and was analyzed to understand its correlation with ulcer development. The largest proportion of patients (50%) had diabetes for 5–10 years (25 patients). This was followed by 32% (16 patients) with a 10 to 20-year history of diabetes, 12% (6 patients) with less than 5 years, and 6% (3 patients) with more than 20 years. The findings highlight that the risk of complications increases with the chronicity of diabetes.

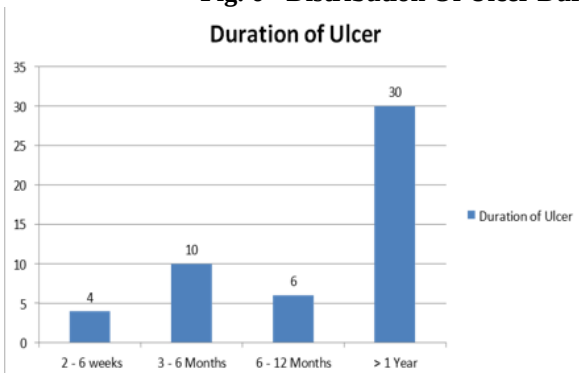
In Figure 4, the patients were grouped based on their treatment regimen. A majority (58%) were on oral hypoglycemic agents (OHAs) alone (29 patients), while 8% (4 patients) were on insulin alone, and 34% (17 patients) used a combination of insulin and OHAs. This indicates that many patients with complications such as foot ulcers require more intensive glycemic control.

Fig. 5 - Scattered Chart Of Hba1c Value



The scatter plot illustrates the distribution of HbA1c levels among 50 diabetic patients in Figure 5. The HbA1c levels among the 50 patients ranged from 5.3% to 14.9%, indicating wide variation in glycemic control. A majority had levels above 8%, reflecting poor diabetes management. Only a few patients showed values below 7%, indicating adequate control. Several cases with extremely high values (>14%) suggest severe long-term hyperglycemia. Overall, most patients demonstrated suboptimal glucose control, contributing to complications like diabetic foot ulcers.

Fig. 6 - Distribution Of Ulcer Duration **Fig. 7 - Type Of Discharge**



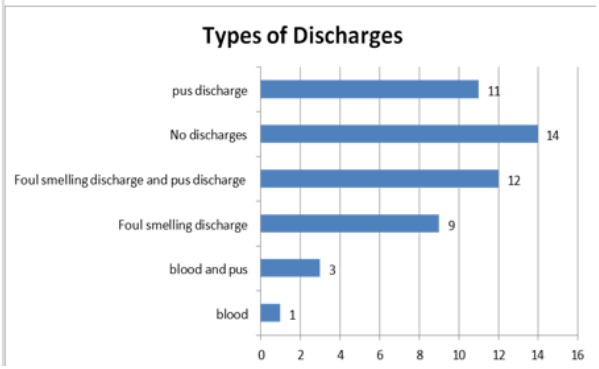
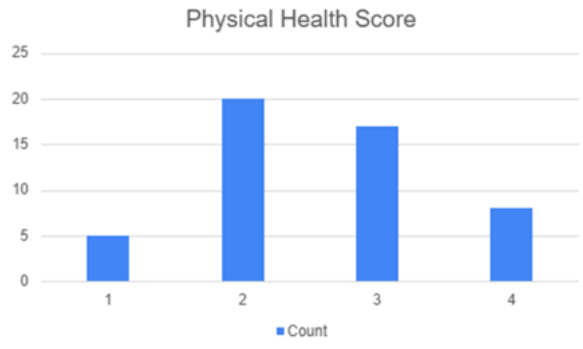


Figure 6 shows that the chronicity of ulcers was also assessed. Most patients (60%) had ulcers lasting more than one year (30 patients), followed by 20% (10 patients) with a duration of 3 – 6 months, 12% (6 patients) between 6–12 months, and only 8% (4 patients) had ulcers for 2 – 6 weeks. These findings reflect delayed healing and possibly late presentation or inadequate treatment.

In Figure 7, the type of wound discharge was used as an indicator of infection severity. The most common presentations were no discharge (28%), foul-smelling plus pus discharge (24%), and pus discharge alone (22%). Additionally, 18% had only foul-smelling discharge; 6% had blood and pus, while 2% had blood alone. These results show a high proportion of infected or poorly healing wounds.

Fig. 8 - Physical Health Score **Fig. 9 - Limitation In Daily Activities**



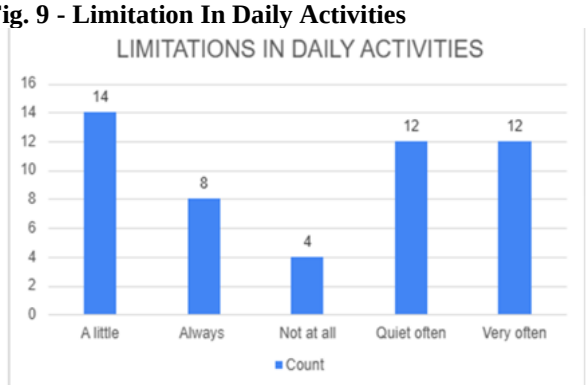
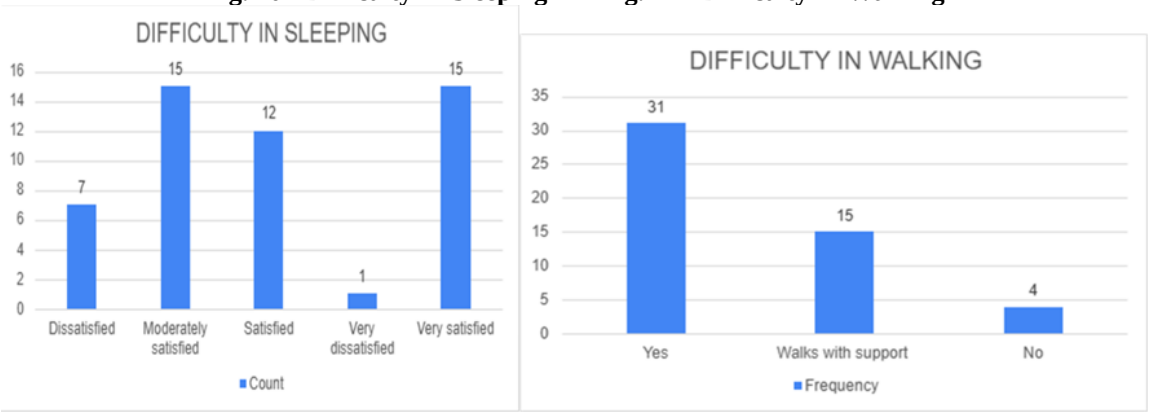


Figure 8 shows the physical health score among patients, which had a mean of 2.56, with scores ranging from 1 to 4. Most patients scored 2 (40%) or 3 (34%), indicating moderate limitations in physical well-being. A smaller portion scored 1 (10%), suggesting severe impairment. Only 16% scored the highest (4), reflecting relatively better physical health. Overall, the data suggest that physical functioning was compromised in the majority of patients.

Figure 9 shows that daily activity limitation was frequently reported, with 12 patients each indicating ‘quite often’ and ‘very often’. Another 14 patients said they experienced limitations ‘a little’, while 8 said ‘always’, and only 4 reported ‘not at all’. This shows that a significant majority face challenges in performing routine activities.

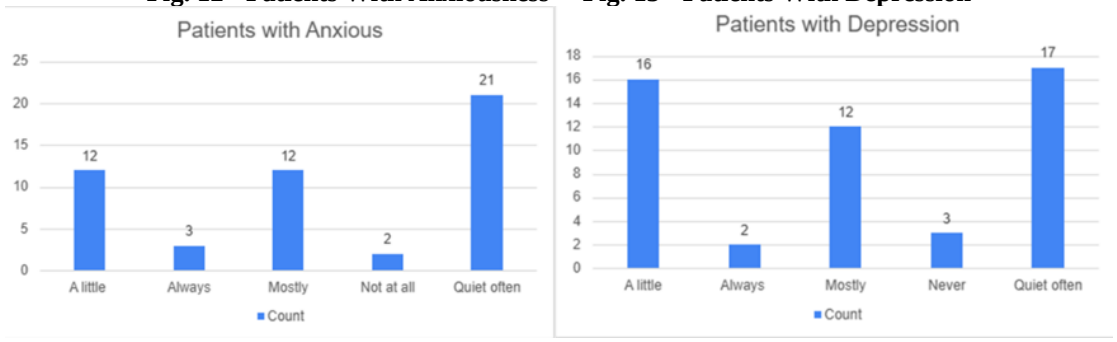
Fig. 10 - Difficulty In Sleeping **Fig. 11 - Difficulty In Walking**



In Figure 10, it shows that in total 50 patients, 15 patients (30%) reported being very satisfied, and 12 (24%) were satisfied. However, 15 (30%) others were only moderately satisfied, and 7 (14%) expressed dissatisfactions One patient reported being very dissatisfied. This variation in satisfaction levels suggests that sleep disturbance is a common concern among patients. Poor sleep quality could be linked to pain, discomfort, or stress due to chronic illness.

Figure 11 shows that out of 50 patients, 31 (62%) reported difficulties in walking, and among them, 15 (30%) required support to walk. Only 4 (8%) patients reported no walking difficulty, highlighting that mobility is significantly affected. This suggests that diabetic complications like foot ulcers contribute heavily to reduced mobility.

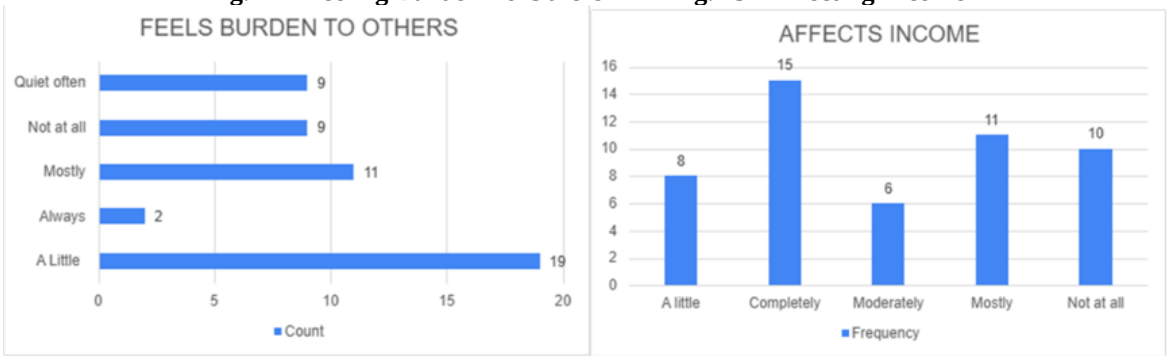
Fig. 12 - Patients With Anxiousness **Fig. 13 - Patients With Depression**



In Figure 12, out of total 50 patients, 2% felt anxious quite often, while 24% felt it a little and another 24% mostly. Only 4% reported not feeling anxious at all, and 6% experienced it always. These numbers indicate that anxiety is a common psychological challenge in diabetic foot ulcer patients.

Figure 13 shows from rom 50 participants, 34% of patients felt depressed quite often, and 32% reported it a little. Another 24% experienced depression mostly, while only 6% never felt depressed. The data shows that over half of the participants had moderate to high levels of depressive symptoms.

Fig. 14 - Feeling Burden To Others **Fig. 15 - Affecting Income**



In Figure 14, many patients reported feeling like a burden. 38% felt it a little, 22% mostly, and 18% quite often. Only 18% reported not feeling this way at all, indicating that a majority struggled with self-worth and dependence.

Figure 15 shows that in total 50 patients,30% reported their income was completely affected, and 22% said it was mostly affected. Only 20% experienced no effect, and 16% felt a little impact. Therefore, Diabetic foot ulcers greatly impact on individuals' financial income and affects the ability to work.

Fig. 16 - Financial Crisis

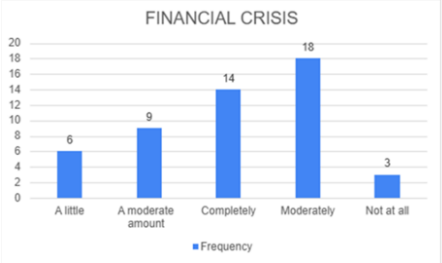


Fig. 17 - Financial Stress

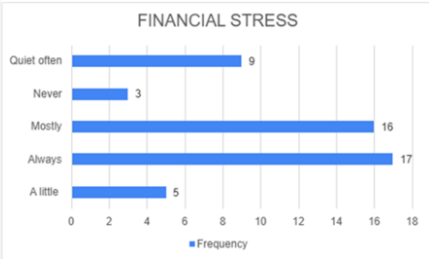


Figure 16 data indicates that 36% of individuals experienced a moderate financial crisis, while 28% were completely affected. This significant impact could be attributed to repeated hospitalizations or a reduced capacity to work and earn. The financial burden appears to be a persistent issue for the majority. In contrast, only 6% reported no financial difficulty, highlighting the widespread economic strain.

Figure 17 shows that a significant number of patients faced ongoing financial pressure due to their medical condition. 34% reported always experiencing financial stress, while 32% stated they mostly experienced it, indicating high and persistent economic strain. In contrast, only 6% of patients never felt financially stressed. These findings suggest that managing diabetic complications imposes a heavy and continuous financial burden On The Majority Of Affected Individuals.

Fig. 18 - Feeling Isolated

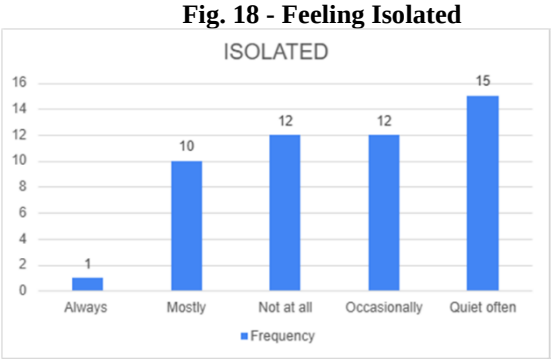


Fig. 19 - Avoids Social Gatherings

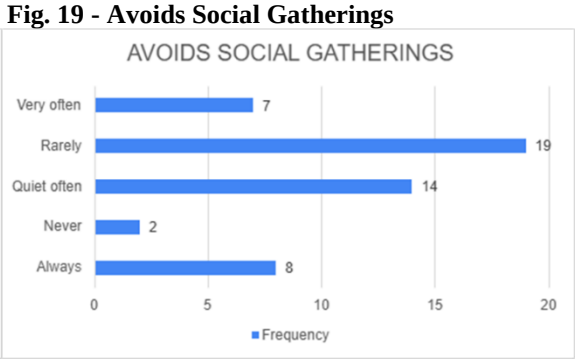
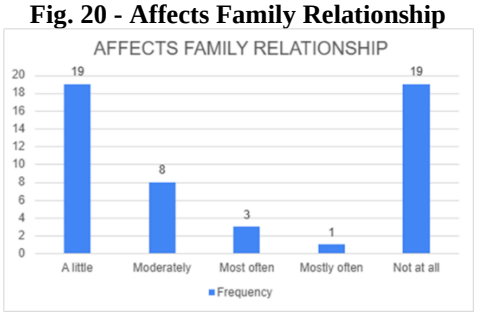


Figure 18 data reveals that 37.5% of patients often felt isolated and 25% mostly experienced the same, indicating a high prevalence of social withdrawal among those with DFUs. This sense of isolation could stem from limited mobility, prolonged treatment, or emotional distress. Social interactions may be reduced due to embarrassment or physical limitations. Only 30% did not feel isolated, emphasizing the social impact of the condition.

Figure 19 shows in patients with diabetic ulcers 28% avoided gatherings quite often, and 16% always, while 38% did so rarely. Only 4% never avoided social events, indicating reduced social engagement and participation.

Fig. 20 - Affects Family Relationship



In Figure 20, 38% reported a little impact, and another 38% reported no impact on family relationships. However, 24% had moderate to frequent effects, suggesting that while some family support remains intact, many patients experience relationship strain.

Table 1: Overall Domain Descriptive

Domains	Mean	Median	Minimum	Maximum	SD
Physical	2.56	2.5	1	4	0.88
Psychological	3.66	4.0	1	5	1.08
Financial	2.94	3.0	1	4	0.87
Social	3.12	4.0	1	5	1.13

In Table 1, the physical domain showed a mean score of 2.56, indicating mild to moderate physical limitations, with scores ranging from 1 to 4. Financial stress had a mean of 2.94, suggesting that most patients experienced frequent economic burdens, with moderate variability (SD = 0.87). Social limitations had a slightly higher mean of 3.12, reflecting moderate to frequent restrictions in daily activities. The psychological domain showed the highest mean score of 3.66, indicating generally positive sleep satisfaction. Both social and psychological domains had a wider range (1 to 5), showing varied patient experiences. Overall, psychological well-being was relatively better preserved compared to other domains.

IV. Discussion

Diabetes mellitus (DM) is a chronic metabolic disorder of increasing global concern. As per the International Diabetes Federation, more than 500 million adults were affected by diabetes in 2021, with projections estimating a sharp rise by 2045. Among its many complications, diabetic foot ulcers (DFUs) stand out due to their debilitating nature, affecting approximately 15–25% of diabetic individuals during their lifetime. Diabetes, being a systemic disease, often presents severe lower extremity manifestations, including DFUs and diabetic foot infections, which contribute significantly to morbidity and mortality. [14] Our findings reinforce existing evidence that DFUs have a disproportionately high negative impact on multiple domains of a patient's life—physical, psychological, social, and economic. In India, sociocultural factors such as barefoot walking, inappropriate footwear, and limited knowledge about diabetic foot care contribute heavily to the incidence and poor outcomes of DFUs. [24] Our data reflected that many patients had minimal or no education regarding foot hygiene or ulcer prevention, and only 16% of patients had received an annual foot examination, despite previous study findings indicating a diabetic foot problem prevalence of nearly 40%. [6] Furthermore, many ulcers were found to be neglected or improperly managed, worsening both clinical outcomes and quality of life. [25] This study underscores the importance of QoL as a multidimensional concept, encompassing physical functioning, psychological well-being, social relationships, and environmental context. Even in diabetic patients without complications, the burden of managing medications, dietary restrictions, and lifestyle adjustments is significant. However, those suffering from DFUs bear additional, often more severe, burdens— chronic pain, restricted mobility, increased risk of amputation, frequent infections, and dependency on caregivers. [26] The retrospective findings show that ischemic DFUs and weight-bearing challenges were closely linked with lower QoL scores. Pain resulting from ischemia, loss of independence due to immobility, and the logistical strain of frequent hospital visits for wound care contributed significantly to patient distress. [27] Moreover, economic hardship due to treatment costs and loss of employment further compounded the patients' psychological stress. These elements echo results from prior qualitative studies, which also identified emotional upheaval, fear of amputation, and prolonged healing as major psychological stressors for DFU patients. [28] Alarmingly, several studies have suggested that patients with active foot ulcers report significantly lower health-related quality of life (HRQoL) compared to those whose ulcers have healed. [7] This indicates the persistent and ongoing toll of DFUs on patients' lives, emphasizing the necessity of early and effective interventions. One of the most striking observations from this study is the psychological burden DFUs place on patients. The fear of potential amputation, frequent hospital visits, and uncertainty about healing contribute to elevated stress levels, depression, and social withdrawal. [29] Patients often isolate themselves due to reduced mobility or the perceived stigma associated with foot ulcers, especially when ulcers are accompanied by odor or visible wounds. [30] Given these findings, it is evident that DFU management requires a holistic, multidisciplinary approach. Effective care should not only focus on wound healing but also prioritize mental health, social reintegration, and rehabilitation. Health professionals must be trained to recognize signs of psychological distress and incorporate mental health support, patient education, and social services into the treatment framework. [31] This approach will likely lead to better patient outcomes and an improved quality of life. Additionally, preventive strategies are crucial. Patient education

on proper foot hygiene, timely recognition of early signs of ulceration, regular screenings, and access to podiatric care are essential to mitigate the risk and progression of DFUs. [27] Simple but impactful interventions, such as the use of appropriate footwear, routine foot checks, and family education on foot care, can lead to significant reductions in complications, treatment costs, and overall disease burden. Finally, understanding the determinants of QoL in DFU patients helps clinicians in risk stratification, individualized care planning, and prioritizing patients who need comprehensive psycho social support. Stress, in particular, has been shown to delay wound healing, thereby prolonging care and diminishing QoL. [32] Hence, efforts to reduce stress and psychological burden can have dual benefits: faster wound recovery and better life satisfaction.

This study evaluated the effects of four quality of life (QoL) areas on individuals with diabetic foot ulcers (DFU): social, psychological, financial, and physical. Measuring each domain's contribution to the general well-being and day-to-day functioning of individuals with this chronic disease was the goal. Among the four assessed domains, the financial aspect showed the greatest and most consistent influence on the quality of life for patients dealing with diabetic foot ulcers (DFU) suggesting that the majority of patients faced a similar financial strain due to continuous medical costs, diminished work capacity, frequent hospital visits, and long-term care expenses. The findings underline the importance of a multidisciplinary care approach—including psychological counseling, financial support services, and community-based interventions—to address the comprehensive needs of these patients.

V. Conclusion

This study revealed that diabetic foot ulcers (DFUs) significantly affect quality of life, particularly among men aged 40–65, most of whom were employed and developed ulcers due to workplace injuries and poor foot care awareness. The most affected areas were physical and financial, with patients reporting mobility issues, limited daily function, and job loss, leading to financial strain and reduced ability to support their families. Although psychological and social effects were somewhat less severe, many experienced emotional distress, isolation, and dependency-related stress. These factors may hinder recovery and adherence to treatment. The findings underscore the importance of early detection, preventive education, and a comprehensive, multidisciplinary approach to DFU management. Such care can improve physical function, ease financial burdens, and support psychological well-being, ultimately enhancing patients' overall quality of life. Additionally, integrating community-based foot care programs and routine screenings at workplaces could reduce DFU incidence in high-risk groups. Involvement of family in the care process may also improve emotional outcomes and adherence. Awareness campaigns targeting working-age men should be prioritized. Without timely intervention, DFUs can escalate into chronic disability, leading to long-term socioeconomic consequences.

References

[1] Roglic, G., 2016. WHO Global Report On Diabetes: A Summary. International Journal Of Noncommunicable Diseases, 1(1), Pp.3-8.

[2] Deshmukh, C.D., Jain, A. And Nahata, B., 2015. Diabetes Mellitus: A Review. Int. J. Pure Appl. Biosci, 3(3), Pp.224-230.

[3] Olokoba, A.B., Obateru, O.A., Olokoba, L.B., Type 2 Diabetes Mellitus: A Review Of Current Trends, Oman Med J., 27(4): 269–273 (2012)

[4] Kostev, K., Jockwig, A., Hallwachs, A. And Rathmann, W., 2014. Prevalence And Risk Factors Of Neuropathy In Newly Diagnosed Type 2 Diabetes In Primary Care Practices: A Retrospective Database Analysis In Germany And UK. Primary Care Diabetes, 8(3), Pp.250-255.

[5] Wild, S., Roglic, G., Green, A., Sicree, R., King, H. Global Prevalence Of Diabetes: Estimate For The Year 2000 And Projections For 2030. Diabetes Care, 127(5):1047-1053 (2004)

[6] Sekhar, M.S., Thomas, R.R., Unnikrishnan, M.K., Vijayanarayana, K. And Rodrigues, G.S., 2015, September. Impact Of Diabetic Foot Ulcer On Health-Related Quality Of Life: A Cross-Sectional Study. In Seminars In Vascular Surgery (Vol. 28, No. 3-4, Pp. 165-171). WB Saunders.

[7] Ribu, L., Hanestad, B.R., Moum, T., Birkeland, K. And Rustoen, T., 2007. Health-Related Quality Of Life Among Patients With Diabetes And Foot Ulcers: Association With Demographic And Clinical Characteristics.

[8] Journal Of Diabetes And Its Complications, 21(4), Pp.227-236.

[9] Bradbury, S.E. And E Price, P., 2011. Diabetic Foot Ulcer Pain: The Hidden Burden (Part Two). EWMA Journal, 11(2).

[10] Khunkaew, S., Fernandez, R. And Sim, J., 2019. Health-Related Quality Of Life Among Adults Living With Diabetic Foot Ulcers: A Meta-Analysis. Quality Of Life Research, 28, Pp.1413-1427.

[11] Aalaa M, Malazy OT, Sanjari M, Peimani M, Mohajeri-Tehrani M. Nurses' Role In Diabetic Foot Prevention And Care; A Review. J Diabetes Metab Disord. 2012;11:24. Doi: 10.1186/2251-6581-11-24.

[12] Richard JL, Schuldiner S. [Epidemiology Of Diabetic Foot Problems] Rev Med Interne. 2008;29 Suppl 2:S222–S230. Doi: 10.1016/S0248-8663(08)73949-3.

[13] Nather A, Bee CS, Huak CY, Chew JL, Lin CB, Neo S, Sim EY. Epidemiology Of Diabetic Foot Problems And Predictive Factors For Limb Loss. J Diabetes Complications. 2008;22:77–82. Doi: 10.1016/J.Jdiacomp.2007.04.004.

[14] Bakri FG, Allan AH, Khader YS, Younes NA, Ajlouni KM. Prevalence Of Diabetic Foot Ulcer And Its Associated Risk Factors Among Diabetic Patients In Jordan. J Med J. 2012;46:118–125.

[15] Jayalakshmi, M.S., Thenmozhi, P. And Vijayaragavan, R., 2020. Impact Of Chronic Wound On Quality Of Life Among Diabetic Foot Ulcer Patients In A Selected Hospital Of Guwahati, Assam, India. AYU (An International Quarterly Journal Of Research In Ayurveda), 41(1), Pp.19-23.

[16] Macfarlane RM, Jeffcoate WJ. Factors Contributing To The Presentation Of Diabetic Foot Ulcers. Diabet Med. 1997;14(10):867–870.
[17] Bastable S. Nurse As Educator. Second Ed. Sudbury: Jones & Bartlett; 2007
[18] Vileikyte L. Diabetic Foot Ulcers: A Quality Of Life Issue. Diabetes Metab Res Rev. 2001;17:246–249. Doi: 10.1002/Dmrr.216.
[19] Bodhare, T., Bele, S., Muthiah, T., Rajh, B. And V Jr, S., 2025. Health Costs And Quality Of Life Among Diabetic Foot Ulcer Patients In South India: A Cross-Sectional Study. Cureus, 17(3).
[20] Raspovic KM, Wukich DK. Self-Reported Quality Of Life And Diabetic Foot Infections. J Foot Ankle Surg. 2014;53(6):716–719.
[21] Goodridge D, Trepman E, Embil JM. Health-Related Quality Of Life In Diabetic Patientswith Foot Ulcers: Literature Review. J Wound, Ostomy Cont Nurs. 2005;32(6):368–377.
[22] García-Morales E, Lázaro-Martínez JL, Martínez-Hernández D, Aragón-Sánchez J,Beneit-Montesinos JV, González-Jurado MA. Impact Of Diabetic Foot Related Complications On The Health Related Quality Of Life (Hrqol) Of Patients-A Regional Study In Spain. Int J Low Extrem Wounds. 2011;10(1):6–11.
[23] Sanjari M, Safari S, Shokoohi M, Et Al. A Cross-Sectional Study In Kerman, Iran, On Theeffect Of Diabetic Foot Ulcer On Health-Related Quality Of Life. Int J Low Extrem Wounds.2011;10(4):200–206.
[24] Price P, Harding K. The Impact Of Foot Complications On Health-Related Quality Of Lifein Patients With Diabetes. J Cutan Med Surg. 2000;4(1):45–50.
[25] International Journal Of Diabetes In Developing Countries. March 2008.38(1):580-01.
[26] Sriussadaporn S Ploybutr S Nitiyanant W Vannasaeng S Vichayanrat A Behavior In Self-Care Of The Foot And Foot Ulcers In Thai Non-Insulin Dependent Diabetes Mellitus J Med Assoc Thai 1998 81 1 29 35 9470319
[27] Jaap J Van Netten, Mendel Baba, Peter A. Lazzarini. Epidemiology Of Diabetic Foot Disease And Diabetes- Related Lower Extremity Amputation In Australia: A Systematic Review Protocol. Systematic Reviews 2017.V 6:101
[28] Sothornwit, J., Srisawasdi, G., Suwannakin, A. And Sriwijitkamol, A., 2018. Decreased Health-Related Quality Of Life In Patients With Diabetic Foot Problems. Diabetes, Metabolic Syndrome And Obesity: Targets And Therapy, Pp.35-43.
[29] Crocker, R.M., Palmer, K.N., Marrero, D.G. And Tan, T.W., 2021. Patient Perspectives On The Physical, Psycho-Social, And Financial Impacts Of Diabetic Foot Ulceration And Amputation. Journal Of Diabetes And Its Complications, 35(8), P.107960.
[30] Siersma, V., Thorsen, H., Holstein, P.E., Kars, M., Apelqvist, J., Jude, E.B., Piaggesi, A., Bakker, K., Edmonds, M., Jirkovska, A. And Mauricio, D., 2014. Health-Related Quality Of Life Predicts Major Amputation And Death, But Not Healing, In People With Diabetes Presenting With Foot Ulcers: The Eurodiale Study. Diabetes Care, 37(3), Pp.694-700.
[31] Hjelm, K. And Beebwa, E., 2013. The Influence Of Beliefs About Health And Illness On Foot Care In Ugandan Persons With Diabetic Foot Ulcers. The Open Nursing Journal, 7, P.123.
[32] Alfaqih, M.R., Kusnanto, K. And Padoli, P., 2020. A Systematic Review: The Experience Of Patient With Diabetic Foot Ulcers. Jurnal Ners, 15(2), Pp.120-128.
[33] Caroline M, Et Al. 'Optimizing Wellbeing In Patients With Diabetic Foot Ulcers. J Europ Wound Manage Assoc 2019; Vol. 20::23-28