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Research

Study on Assessment of Drug Compliance in Diabetic Patients in Rural Area of Dharmapuri District Tamilnadu

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Abstract

Aim: The study aimed to assess drug compliance among diabetic patients residing in the rural areas of Dharmapuri district, Tamil Nadu, and to evaluate related factors affecting their quality of life.
Methods: A cross-sectional study was conducted from August 2024 to January 2025, involving 100 diabetic patients diagnosed with Type II Diabetes Mellitus. Participants were chosen through quota sampling from two rural areas, with data collected via a structured questionnaire focusing on drug compliance and quality of life across four domains: social health, physical health, physiological health, and environmental health.
Results: Gender distribution analysis showed a slightly higher prevalence of diabetes in females (51%) compared to males (49%). Compliance issues were often linked to factors such as knowledge deficits and accessibility to healthcare facilities.
Conclusion: Improving patient education and establishing more accessible healthcare services are essential to enhance drug compliance and overall quality of life for diabetic patients in rural areas. These findings underscore the need for targeted interventions to address the unique challenges faced by this population.

Keywords: Diabetes mellitus, drug compliance, rural health, quality of life,

INTRODUCTION

Diabetes mellitus refers to a group of metabolic disorders characterized by persistent hyper-glycemia, which results from either impaired insulin production, insulin action, or both. Chronic diabetes can lead to a range of complications, causing long-term damage and dysfunction in various organs, particularly the kidneys, nerves, eyes, heart, and blood vessels[1]. Type 2 diabetes mellitus is increasingly prevalent among children, largely due to the rising epidemic of childhood obesity[2]. The Indian Council of Medical Research (ICMR) reported a prevalence

of 2.1% in urban areas and 1.5% in rural zones, with subsequent studies indicating that urban prevalence is three times higher at 8.2%, compared to 2.4% in rural populations[3]. According to the World Health Organization, there were approximately 135 million individuals with diabetes in 1995, with projections suggesting this number will rise to 300 million by 2025. India is expected to experience the highest increase in the number of diabetes cases[4]. Drug compliance is defined as "the extent to which a person's behaviour aligns with medical advice."Noncompliance, on the other hand, refers to patients not following the guidance provided by healthcare professionals. Factors contributing to noncompliance often include personal traits such as forgetfulness, lack of discipline, or insufficient knowledge about the condition. This concept of noncompliance has been criticized for portraying patients in a negative light, positioning them in a passive and unequal role relative to their healthcare providers[5].

MATERIAL AND METHODS

A cross-sectional study was conducted from August 2024 to January2025, targeting diabetic patients from two rural areas in Dharmapuri district, Tamil Nadu. A total of 100 patients diagnosed with Type II Diabetes Mellitus, who were undergoing regular treatment, were selected based on quota sampling from a field practice area associated with a tertiary teaching hospital in Dharmapuri. Participants were required to be over 18 years of age. The exclusion criteria included patients diagnosed with Type I Diabetes Mellitus, pregnant or lactating women, and individuals who were unwilling to provide informed consent. Written informed consent, in Tamil, was obtained from all participants prior to their inclusion in the study. All data were rigorously reviewed and cross-checked with physical records to identify and correct any errors. The study also explored the association between drug compliance and various demographic factors.

RESULTS AND DISCUSSION

Table 1: Gender wise distribution of diabetic patients in the rural areas

Gender	Number of patients	Percentage (%)
Male	49	49
Female	51	51

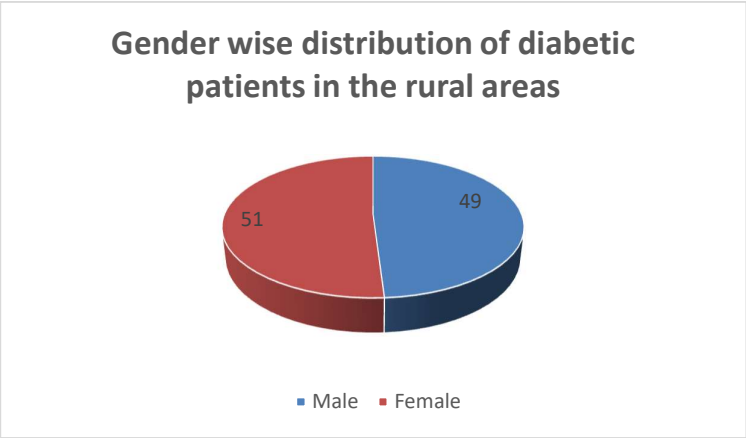

Fig1: Gender wise distribution of diabetic patients in the rural areas

The study analyzed the gender distribution among diabetic patients to assess which group is more prone to diabetes mellitus. Out of the 100 patients included in the study, 49% were male, and 51% were female. These findings suggest a slightly higher prevalence of diabetes among females compared to males. The data were presented in table no.1 and figure no.1

Table 2: Age wise distribution of diabetic patients in the rural areas

S .no	Age	No of male cases	Percentage of male cases	No of female cases	Percentage of female cases
1	20-45	11	22.44%	8	15.68%
2	46-70	33	67.34%	39	76.47%
3	Above 70	5	10.20%	4	7.84%

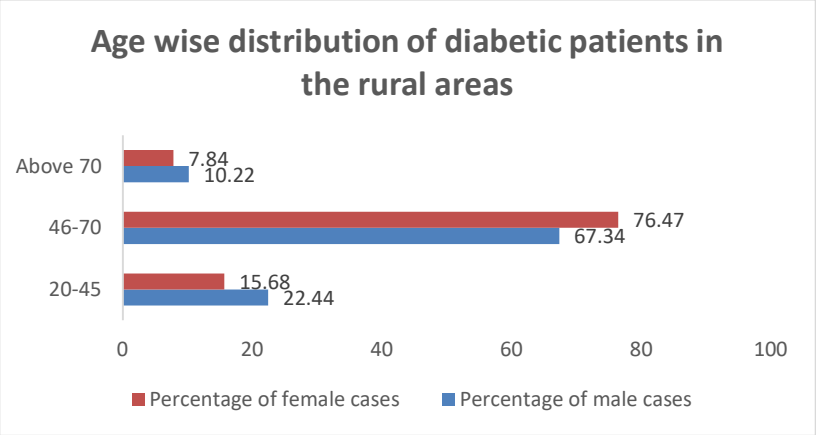

Fig2: Age wise distribution of diabetic patients in the rural areas

The patients were categorized into three age groups: 20-45, 46-70, and above 70. The distribution of male patients across these groups was 11, 33, and 5, while the female patients were 8, 39, and 4, respectively. Table 2 and Figure 2 present the total number of patients in each age group along with their percentages. The data indicates that the majority of patients belonged to the 46-70 age group, followed by the 20-45 age group.

Table 3: Duration of diabetic among the patients in the rural areas

S .no	Duration in months	Male	Female
1	0-50	(21)42.85%	(24)47.05%
2	51-100	(16) 32.65%	(14)27.45%
3	101-150	(5)10.20%	(8)15.68%
4	151-200	(6)9.09%	(2) 3.92%
5	201-250	0%	(1)1.96%
6	251-300	(1)2.04%	(2)3.92%

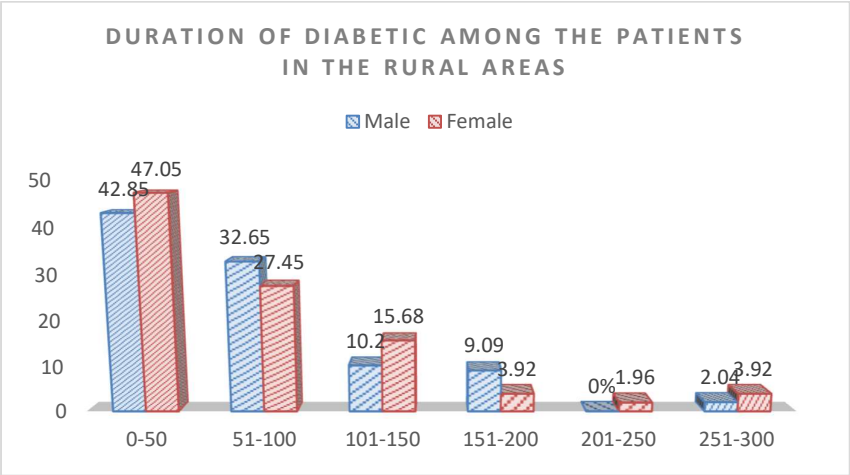

Fig3: Duration of diabetic among patients in the rural areas

The duration of diabetes among patients was categorized into six groups: 0–50, 51–100, 101–150, 151–200, 201–250, and 251–300 months. The data revealed that the highest percentage of patients fell within the 0–50 months category, comprising 42.85% of females and 47.05% of males. The distribution of patients across these categories is presented in Table 3 and illustrated in Figure 3.

Table 4: Distribution of patients with family history of diabetes mellitus

S .no	Gender	No of cases with family history	Percentage of cases with family history
1	Male	14	28.57
2	Female	18	36.73

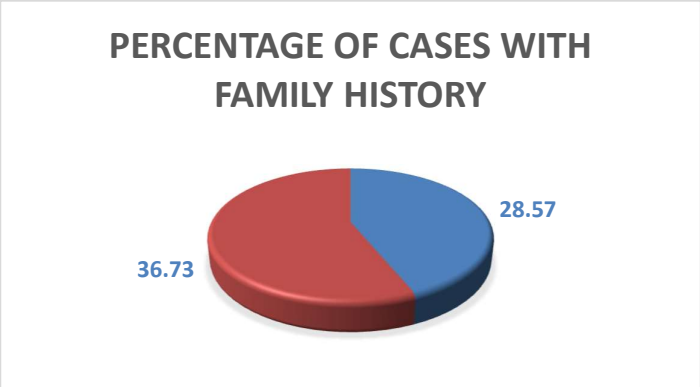

Fig4: Distribution of patients with family history of diabetes mellitus

Among the 100 patients, the distribution of those with a family history of diabetes was analyzed. It was observed that 14 male patients (28.57%) and 18 female patients (36.73%) had a family history of diabetes. This data is illustrated in Table 4 and Figure 4.

Table 5: Percentage of cases who stop taking the medication without the advice of the doctor

S .no	Gender	Number of patients	Percentage of cases
1	Male	8	16.32
2	Female	12	23.52

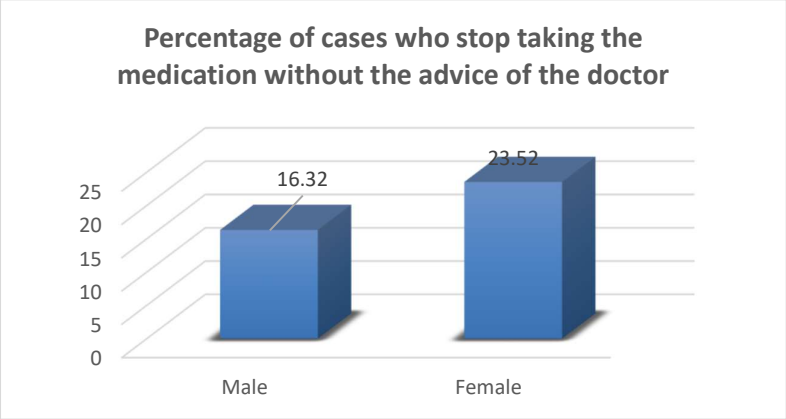

Fig5: Percentage of cases who stop taking the medication without the advice of the doctor

Out of the 100 patients studied, 23.52% of females and 16.32% of males stopped taking their medication without consulting their doctor. This highlights a slightly higher tendency among females to discontinue their medication without medical advice. The findings stress the need for better communication between patients and healthcare providers to address this issue. The data is clearly outlined in Table 5 and visually represented in Figure 5.

Table 6: Reasons for non-compliance

Gender	No. of patients	Control No. of patients / (%)	Forget No. of patients / (%)	Worse No. of patients / (%)	Distance No. of patients / (%)	Expense No. of patients / (%)
Male	8	1(12.5 %)	2(25 %)	1(12.5 %)	2(25 %)	2(25 %)
Female	12	1(8.3 %)	3(25 %)	2(16.6 %)	2(16.6 %)	4(33.3 %)

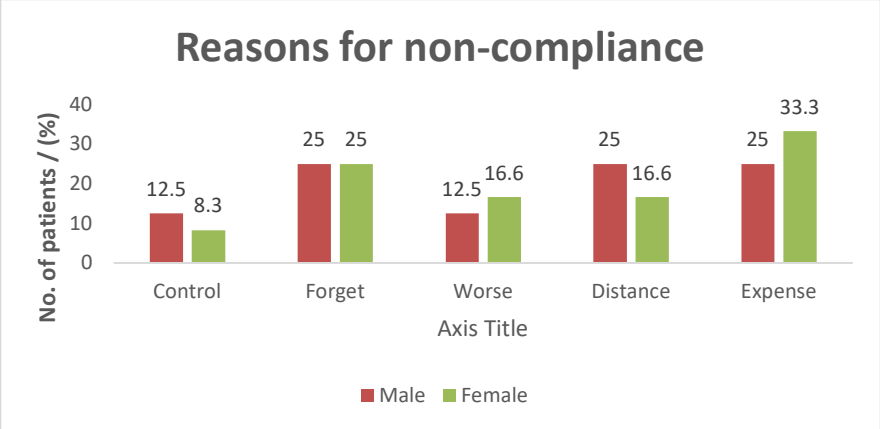

Fig 6: Reasons for non-compliance

The reasons for non-compliance among patients included a belief that their blood glucose levels (BGL) were already under control, forgetfulness in taking medication, experiencing adverse effects that made them feel worse, challenges posed by the distance to healthcare facilities for routine check-ups, and the high cost of treatment. These findings are summarized in Table 6 and illustrated in Figure 6.

Table 7: Intervals of Lab Investigation and Consultation

S.No	Time interval in months	No of patients	
		Lab investigation	Doctor consultation
1	1 Month	50	61
2	2months	15	10
3	3 months	24	13
4	4 months	4	6
5	6 months	7	10

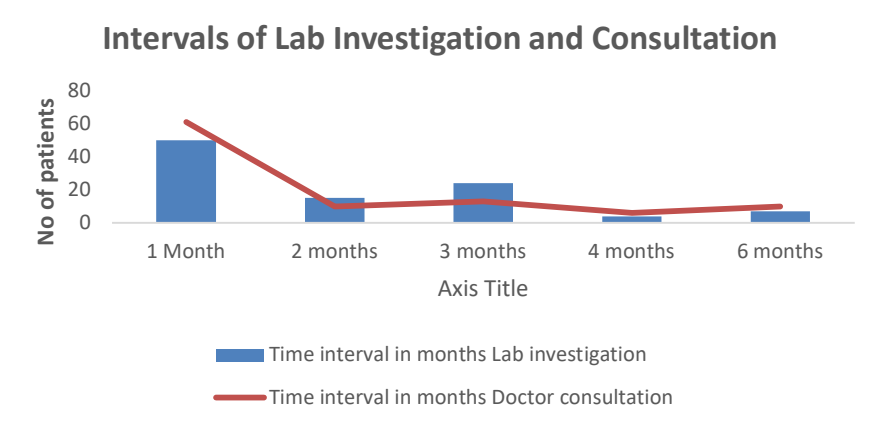

Fig 7: Intervals of Lab Investigation and Consultation

Out of 100 patients, 50 monitored their blood glucose levels through laboratory investigations, while 61 visited their physician for regular monthly consultations.

Table 8: Type of Hospital visit

S .no	Gender	Government	Private
1	Male	38.7 %	61.3 %
2	Female	44.7 %	55.3 %

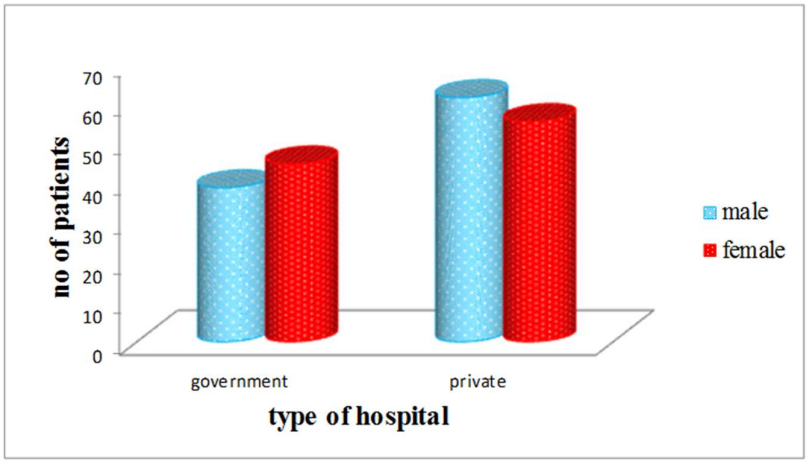

Fig8: Type of Hospital visit

Out of the 100 diabetic patients, the percentage of patients who go to the government or private hospital was determined.38.7% and 61.3% of male patients and 44.7% and 55.3% of female patients visit the government and private hospitals respectively. The data's were presented in table no. 7 and figure no. 7

CONCULSION

The diabetes team (Physician, nurse, pharmacist, dieticians and Psychologist) must provide education to the patients completely understand to how control the disease and how to prevent short term and long term problems. The introduction of free blood glucose lowering medicine, educational and intervention designed to facilitate the improve glycaemic control, better drug compliance in people with diabetes.

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