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# Assessment of Medication Compliance among Type 2 Diabetes Patients Attending a Rural Health Centre in Tamil Nadu

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## Abstract

**Background:** Diabetes Mellitus (DM) continues to rise in India, with Type 2 DM accounting for the majority of cases. Medication adherence plays a critical role in achieving optimal glycaemic control and preventing complications, yet poor compliance remains a challenge, particularly in rural populations.

**Objectives:** To assess medication compliance among Type 2 DM patients attending a Rural Health Training Centre (RHTC) in Tamil Nadu and to identify socio-demographic and clinical factors influencing compliance.

**Methods:** A facility-based cross-sectional study was conducted among 300 adults with Type 2 DM attending the outpatient clinic of an RHTC. Participants aged ≥30 years with at least six months of treatment history were included. Data were collected using a pre-tested semi-structured questionnaire. Medication compliance was assessed using three validated self-report questions. Glycaemic control was evaluated using fasting and post-prandial blood glucose values from records. Data were analysed using STATA; Prevalence Ratios and adjusted PR (aPR) with 95% confidence intervals (CI) were calculated.

**Results:** The prevalence of poor medication compliance was 24%. Poor compliance was significantly higher among employed (28%) and retired individuals (27%), compared to unemployed participants (14%). Physical inactivity (aPR = 11.2; p = 0.01), longer distance from health facility (>5 km) (aPR = 2.0; p = 0.03), and absence of comorbidities (aPR = 0.35; p = 0.03) were significantly associated with poor adherence. Good glycaemic control was observed in 18% of participants, while 62% demonstrated poor control. Knowledge regarding disease and treatment was high (86%), yet forgetfulness, lack of awareness, and distance to health center were common barriers. Family support and motivation were noted as key facilitators.

**Conclusion:** Nearly one-fourth of patients had poor medication compliance despite high disease awareness. Employment-related constraints, poor physical activity, and limited access to healthcare facilities were major determinants of non-adherence. Strengthening counselling, enhancing behavioural support, and improving accessibility through community-based outreach programs could significantly improve medication adherence among rural diabetic patients.

**Keywords:** Ocular ultrasonography, B-scan ultrasound, Ocular complaints, Cataract

## Introduction

India is witnessing a fast-growing burden of Diabetes Mellitus (DM), positioning the country as a major global hotspot for the disease. Current projections indicate that the diabetic population in India will rise to nearly 69.9 million by 2025 and reach approximately 80 million by 2030 [1]. Present estimates suggest that about 74.2 million individuals in the country are living with diabetes, making India the nation with the second-highest number of diabetic cases worldwide, next only to China [1]. The central aim of diabetes management is to attain and maintain optimal glycaemic control and reduce the risk of long-term

complications. This requires continuous adherence to treatment components such as pharmacotherapy, dietary modifications, regular physical exercise, and routine blood glucose monitoring [2].
Sustained glycaemic control can be achieved through healthy lifestyle practices and consistent use of recommended oral or injectable anti-diabetic medications [2]. Adhering to appropriate therapeutic regimens plays a crucial role in delaying disease progression, minimizing morbidity, and preventing diabetes-related complications [2]. However, since the majority of diabetes management relies on patient-initiated daily practices, adherence remains a significant challenge, with nearly 98 percent of diabetes care depending on self-management [3]. Several studies have shown suboptimal adherence to both medications and lifestyle-based self-care behaviours among individuals with Type 2 Diabetes Mellitus [3–7].

Medication adherence has been strongly linked to favourable clinical outcomes, including improved HbA1c levels, fewer hospital admissions, reduced mortality, and lower healthcare expenditure [6]. Individuals who consistently follow their treatment plans also tend to report better quality of life and overall well-being [8]. The terms “adherence” and “compliance,” although used interchangeably, differ conceptually: adherence indicates an active patient-physician partnership in treatment planning, while compliance refers to a more passive following of medical instructions [9]. Since objective measurement of adherence can be difficult in community settings, this study focuses on self-reported medication compliance to better understand real-world patient behaviour in individuals living with Type 2 Diabetes Mellitus [10].

The specific objectives of this study are:
a) To assess the level of compliance with prescribed anti-diabetic medications among individuals with Type 2 Diabetes Mellitus.
b) To determine socio-demographic, behavioural, and clinical factors associated with medication compliance.
c) To identify reported reasons for both satisfactory and poor compliance with anti-diabetic medications.

## Materials & Methods

### Study Design

This facility-based cross-sectional study was conducted to assess medication compliance and its associated factors among patients with diabetes mellitus attending a Rural Health Training Centre (RHTC).

### Study Setting and Duration

The study was carried out in the outpatient department of the Rural Health Training Centre attached to a tertiary care teaching institution in Tamil Nadu, South India. Data collection was conducted over a one-month period from November 2024 to December 2024.

### Study Population

The study population comprised adult patients with a confirmed diagnosis of diabetes mellitus attending the RHTC for regular follow-up and treatment. Eligible participants were recruited consecutively during their scheduled outpatient visits after providing written informed consent.

### Sample Size

A total of 300 participants were included in the study. The sample size was calculated using OpenEpi version 3.0, based on an expected prevalence of poor medication compliance of 11%, with a 95% confidence level, 5% alpha error, and an additional 10% non-response rate.

### Inclusion Criteria

Adults aged more than 30 years, of either gender, with a confirmed diagnosis of diabetes mellitus who had been receiving treatment at the Rural Health Training Centre for at least six months, and who were willing to provide written informed consent, were included in the study.

**Exclusion Criteria**

Pregnant women with gestational diabetes mellitus, patients unwilling to provide written informed consent, and individuals requiring urgent or emergency medical care at the time of recruitment were excluded from the study.

**Data Collection Tool**

Following approval from the Institutional Ethics Committee, eligible participants were enrolled after obtaining written informed consent. Data were collected by trained investigators using a pre-tested semi-structured questionnaire administered under faculty supervision. Information regarding socio-demographic characteristics, including age, gender, educational status, occupation, socioeconomic status, family history of diabetes, and associated comorbidities, was recorded. Clinical details including duration of diabetes, type of antidiabetic treatment, distance from residence to the Rural Health Training Centre, source of medication procurement, frequency of follow-up visits, and receipt of medication adherence counselling from healthcare workers were documented. Medication compliance was assessed using a validated three-item questionnaire evaluating regular availability of prescribed medications, adherence to daily medication intake during the preceding two weeks, and medication intake on the day before the interview. Participants responding "Yes" to all three questions were categorized as having good medication compliance, whereas those responding "No" to any item were considered to have poor medication compliance. Glycaemic control was assessed using the most recent fasting blood sugar (FBS) and postprandial blood sugar (PPBS) values recorded within one month before the interview. Good glycaemic control was defined as FBS between 80–130 mg/dL and PPBS <180 mg/dL, partial control as achievement of only one target value, and poor glycaemic control as FBS >130 mg/dL or PPBS >180 mg/dL. All collected information was recorded systematically in a structured case record proforma and verified for completeness before data entry.

**Ethical Considerations**

The study protocol was approved by the Institutional Ethics Committee before commencement of the study. Written informed consent was obtained from all participants after explaining the objectives and procedures of the study in their local language. Confidentiality and anonymity were maintained by assigning unique identification numbers to each participant, and all data were used exclusively for research purposes in accordance with the ethical principles of the Indian Council of Medical Research (ICMR) guidelines and the Declaration of Helsinki.

**Statistical Analysis**

Data were entered into Microsoft Excel and analyzed using STATA software version 12. Continuous variables were summarized as mean ± standard deviation or median with interquartile range, depending on data distribution, whereas categorical variables were expressed as frequencies and percentages. Associations between categorical variables were initially assessed using the Chi-square test or Fisher's exact test, as appropriate. Variables demonstrating statistical significance in univariate analysis were entered into multivariate logistic regression analysis to identify independent predictors of poor medication compliance. Prevalence Ratios (PR) and Adjusted Prevalence Ratios (aPR) with 95% confidence intervals (CI) were calculated. A p-value <0.05 was considered statistically significant.

## Results

**Table 1: Socio-demographic characteristics of study participants and their unadjusted association with diabetes mellitus drug compliance (N=300)**

| Characteristics | Total (%)[#] | Poor compliance | | PR | 95% CI | p-value |
|---|---|---|---|---|---|---|
| | | n | %^ | | | |
| **Age group (years)** | | | | | | |
| 30–49 | 87 (29.0) | 27 | 31.03 | 1.60 | 0.98–2.61 | 0.06 |
| 50–69 | 181 (60.3) | 36 | 19.89 | 1 (Ref) | — | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| ≥70 | 32 (10.7) | 7 | 21.88 | 1.10 | 0.43–2.78 | 0.84 |
| **Gender** | | | | | | |
| Male | 138 (46.0) | 37 | 26.81 | 1.23 | 0.77–1.97 | 0.38 |
| Female | 162 (54.0) | 34 | 20.99 | 1 (Ref) | — | — |
| **Education** | | | | | | |
| Literate | 280 (93.3) | 70 | 25.00 | 3.00 | 0.47–19.12 | 0.24 |
| Illiterate | 20 (6.7) | 2 | 10.00 | 1 (Ref) | — | — |
| Occupation | | | | | | |
| Employed | 125 (41.7) | 38 | 30.40 | 4.18 | 1.69–10.35 | 0.003* |
| Unemployed | 92 (30.7) | 7 | 7.61 | 1 (Ref) | — | — |
| Retired | 83 (27.6) | 26 | 31.33 | 4.23 | 1.70–10.50 | 0.003* |
| **Socio-economic Status** | | | | | | |
| BPL | 257 (85.7) | 64 | 24.90 | 1.28 | 0.60–2.75 | 0.52 |
| APL | 43 (14.3) | 8 | 18.60 | 1 (Ref) | — | — |
| **Marital status** | | | | | | |
| Married | 260 (86.7) | 60 | 23.08 | 1.14 | 0.20–6.33 | 0.89 |
| Unmarried | 8 (2.7) | 2 | 25.00 | 1 (Ref) | — | — |
| Others | 32 (10.6) | 10 | 31.25 | 1.55 | 0.26–9.13 | 0.62 |
| **Religion** | | | | | | |
| Hindu | 240 (80.0) | 63 | 26.25 | 1.46 | 0.43–4.97 | 0.54 |
| Christian | 42 (14.0) | 5 | 11.90 | 1 (Ref) | — | — |
| Muslim | 18 (6.0) | 4 | 22.22 | 0.72 | 0.16–3.31 | 0.67 |

*Note: #-column %, ^ row %, PR-unadjusted Prevalence ratio, CI-Confidence Interval, Ref-Reference category, APL-Above Poverty Line & BPL-Below Poverty Line, * Statistically significant (p<0.05).*

This table presents the socio-demographic characteristics of the study participants and their association with medication compliance among individuals with type 2 diabetes (N = 300). The majority of the participants were between 50–69 years of age (60.3%), followed by the 30–49 age group (29%). Poor compliance was highest among those aged 30–49 years (31.03%) compared to the 50–69 years group (19.89%), although this association was not statistically significant (p = 0.06). Females constituted 54% of the participants, and while males showed a slightly higher proportion of poor compliance (26.81%) than females (20.99%), this difference was not statistically significant (p = 0.38).

Most participants were literate (93.3%), and literacy did not show a significant association with compliance (p = 0.24). Occupational status demonstrated a strong association with compliance, with employed (30.40%) and retired individuals (31.33%) showing significantly higher poor compliance compared to unemployed individuals (7.61%), and this association was statistically significant (p = 0.003). Participants belonging to below-poverty-line families (85.7%) had slightly higher poor compliance (24.90%) than those above the poverty line (18.60%), but this was not statistically significant (p = 0.52). Regarding marital status, married individuals had a poor compliance rate of 23.08%, slightly higher than unmarried and widowed/separated participants, though the association was not significant (p > 0.05). The majority of participants were Hindus (80%), and religion did not show a significant association with medication compliance (p = 0.54).

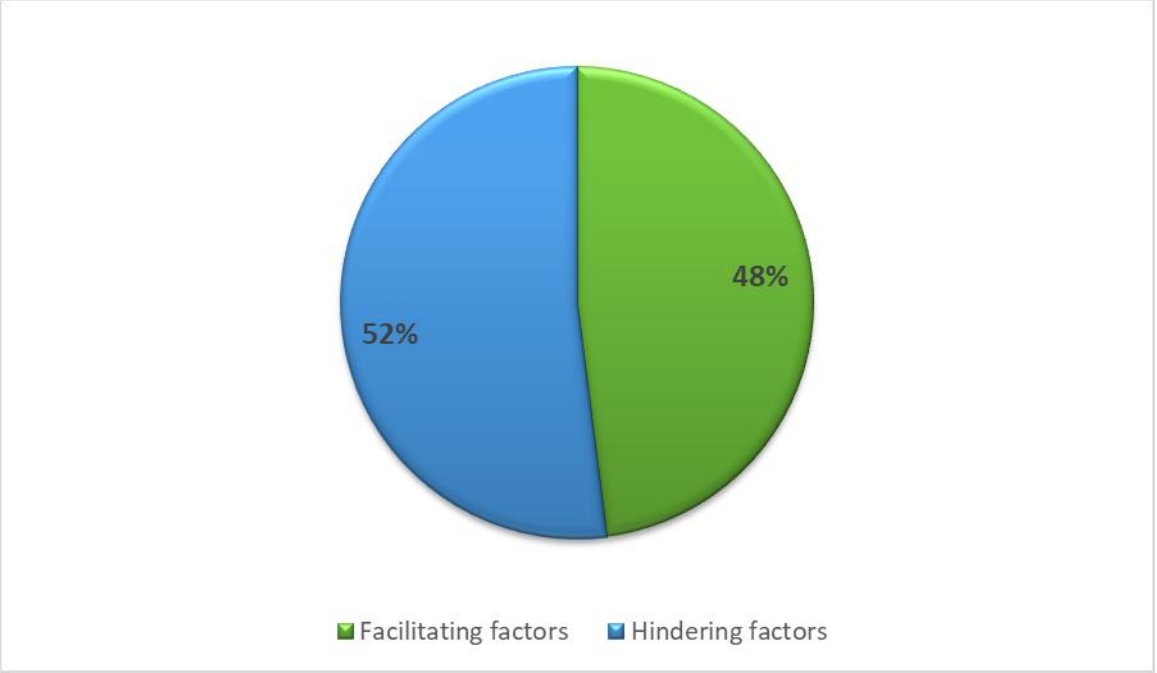
Overall, the findings indicate that younger adults, males, employed and retired individuals, and those from lower socioeconomic strata tend to have higher poor compliance, with occupational status being the only statistically significant predictor in this table. These observations highlight the need for targeted counselling and follow-up strategies, especially for working individuals and younger diabetic patients to improve adherence to therapy.

**Table 2: Facilitating and hindering factors for medication compliance among DM patients (n=300)**

| Variables | Frequency (n) | Percentage (%) |
|---|---|---|
| **Facilitating factors** | | |
| Knowledge about disease treatment | 260 | 86.7 |
| Wish to live longer and healthier | 10 | 3.3 |
| Financial support | 2 | 0.7 |
| Motivation and care by family | 24 | 8.0 |
| Trust in doctors or healthcare | 2 | 0.7 |
| Motivation by friends | 2 | 0.7 |
| **Hindering factors** | | |
| Lack of awareness about the disease and treatment | 96 | 32.0 |
| Fear of drugs and side effects | 9 | 3.0 |
| Financial constraints | 32 | 10.7 |
| Lack of motivation and support by family | 3 | 1.0 |
| Lack of trust on doctors or health care | 2 | 0.7 |
| Does not know | 156 | 52.0 |

The most common supportive factor was good knowledge about diabetes and its treatment, reported by 86.7% of participants. This indicates that awareness and understanding play a major role in encouraging regular medication use. In addition, 8% were motivated by care and support from their family, highlighting the importance of family involvement in diabetes management. Smaller proportions reported motivation to stay healthy and live longer (3.3%), trust in healthcare providers (0.7%), financial support (0.7%), and encouragement from friends (0.7%).

**Figure 1: Facilitating and hindering factors (N = 300)**




In this study, nearly half of the participants (48%) reported factors that supported their adherence to diabetes medication, such as adequate knowledge about the disease, motivation to stay healthy, and encouragement from family and healthcare providers. However, a slightly higher proportion (52%) experienced hindering factors that adversely affected their medication compliance. These barriers included lack of awareness about diabetes and its treatment, fear of side effects, financial constraints, limited support from family, and uncertainty about the importance of regular medication. The predominance of hindering factors highlights the need for enhanced patient education, continuous counselling, and supportive interventions to strengthen treatment adherence, particularly in rural healthcare settings.

## Discussion

The present study found that the prevalence of poor medication compliance among patients with Type 2 Diabetes Mellitus (T2DM) was 23.9% (95% CI: 17.8–30.9). Employed and retired individuals demonstrated a significantly higher prevalence of non-compliance compared with unemployed participants. Most participants (85.6%) showed adequate knowledge regarding diabetes and its treatment. Key strengths of this study include the objective assessment of glycaemic control through fasting and postprandial glucose measurements and the identification of facilitators and barriers influencing medication adherence. However, a limitation is that compliance was assessed using self-reported recall, and the short two-month duration may not have captured fluctuations in adherence behavior. The prevalence of poor medication compliance observed in the present study is comparable to findings from similar studies conducted in South India. Aravindakshan et al., Jaya et al., Venkatachalam et al., Karthik et al., Suguna et al., and Sathish et al. reported medication adherence rates ranging between 49% and 75% among diabetic patients in various South Indian settings [11,12,20–23]. Furthermore, a systematic review by Paudel et al. documented an overall adherence rate of 64% (95% CI: 53–74) across South Asian populations [24]. Poor self-care practices related to diet, physical activity, foot care, and glucose monitoring have also been widely reported in these studies. The relatively better adherence observed in the present study may be attributed to higher literacy levels among participants and the implementation of community-based healthcare initiatives in Tamil Nadu, such as the "Makkalai Thedi Maruthuvam" scheme described by Thiagesan et al., which facilitates doorstep screening and medication delivery for non-communicable diseases [25]. Despite a relatively robust public healthcare system, persistent gaps in adherence highlight the need for targeted behavioral interventions.

The observed association between occupation and poor medication compliance is consistent with earlier findings. Kotian et al. reported similar challenges among working individuals, likely due to difficulty in remembering medication schedules during work hours or disruptions in routine following retirement [19]. Additionally, poor compliance was significantly associated with lack of physical activity, a finding supported by studies conducted by Venkatachalam et al., Suguna et al., Sathish et al., and Srinath et al., which collectively suggest an overall deficit in self-care behaviors driven by time constraints and competing priorities [20,22,23,26]. In contrast, participants with comorbidities demonstrated better adherence, possibly due to increased disease awareness and more frequent healthcare interactions, as noted by Shiomi et al. [18]. Moreover, patients residing more than 5 km from healthcare facilities showed higher odds of non-compliance, reflecting access-related barriers to routine follow-up care. Non-adherence among rural patients with T2DM is strongly influenced by socioeconomic and healthcare system challenges. Rajeshwari et al. reported a non-adherence rate of 39.8% in Chidambaram, identifying financial constraints, fear of side effects, and comorbid conditions as major barriers [27]. Similarly, Deepa et al. reported a non-adherence rate of 45.4% in rural Tamil Nadu, with illiteracy, poor disease awareness, dissatisfaction with physician communication, and coexisting hypertension significantly associated with non-compliance [28]. In rural Bengaluru, Rani PK et al. found that forgetfulness, advancing age, and complex medication regimens were key contributors to poor adherence [29]. These findings emphasize the importance of structured diabetes education, simplified drug regimens, and enhanced doctor–patient communication. Further insights are provided by a qualitative study conducted in rural Puducherry by Krishnamoorthy et al., which identified stress, forgetfulness, alcohol use, fear of hypoglycaemia, inadequate family support, social stigma, and insufficient counselling as major barriers to medication adherence [30]. Conversely, strong family support, peer motivation, prior adverse illness experiences, and consistent counselling were found to improve adherence. The authors recommended community-based peer support groups, simplified medication labeling, and strengthened follow-up by frontline health workers to address these barriers effectively.

**Limitations:** The study was conducted at a single rural health centre, which may limit the generalizability of findings to urban or diverse healthcare settings. Future longitudinal studies with larger and more heterogeneous populations are needed to validate these results and to evaluate the long-term impact of targeted adherence-enhancing interventions.

## Conclusion

The present study found that poor medication compliance among diabetic patients was low. Lack of physical activity was found to be associated with poor medication compliance; hence, behaviour change communication strategies in this regard can help in improving compliance in this study population. The presence of comorbidities was associated with good compliance, which might be due to good awareness about diabetes and its complications. A greater distance to the health centre is associated with poor compliance, which can be overcome by conducting regular mobile camps in such villages. Overall, there is a need to develop a structured diabetes self-care education program for people in rural areas to ensure long-term care.

**Conflict of Interest:** Nil

## Reference


1. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care 2004;27(5):1047–53.
2. Afaya RA, Bam V, Azongo TB, Afaya A, Kusi-Amponsah A, Ajusiyine JM, et al. Medication adherence and self-care behaviours among patients with type 2 diabetes mellitus in Ghana. PloS One 2020;15(8):e0237710.
3. Aravindakshan R, Abraham SB, Aiyappan R. Medication Adherence to Oral Hypoglycemic Drugs among Individuals with Type 2 Diabetes Mellitus - A Community Study. Indian J Community Med Off Publ Indian Assoc Prev Soc Med 2021;46(3):503–7.
4. Jaya AM, Harries AD, Rahman A, Khogali M, Chinnakali P, Gopal B. Compliance with Medication amongst Persons with Diabetes Mellitus during the COVID-19 Pandemic, Kerala, India: A Cross Sectional Study. Trop Med Infect Dis 2022;7(6):104.
5. Kotian SP, Waingankar P, Mahadik VJ. Assessment of compliance to treatment of hypertension and diabetes among previously diagnosed patients in urban slums of Belapur, Navi Mumbai, India. Indian J Public Health 2019;63(4):348–52.
6. Rani P, Prashanthi B, Fathima A. Medication adherence in patients with Type 2 Diabetes Mellitus- A cross-sectional study. Asian Journal of Pharmaceutical and Clinical Research 2019;12(10):177–80.
7. Karthik RC, Radhakrishnan A, Vikram A, Arumugam B, Jagadeesh S. Self-care practices among type II diabetics in rural area of Kancheepuram district, Tamil Nadu. J Fam Med Prim Care 2020;9(6):2912–8.
8. Alfian SD, Sukandar H, Lestari K, Abdulah R. Medication Adherence Contributes to an Improved Quality of Life in Type 2 Diabetes Mellitus Patients: A Cross-Sectional Study. Diabetes Ther Res Treat Educ Diabetes Relat Disord 2016;7(4):755–64.
9. World Health Organization. Adherence to long- term therapies-Evidence for action. 2002;
10. Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive validity of a medication adherence measure in an outpatient setting. J Clin Hypertens Greenwich Conn 2008;10(5):348–54.
11. Aravindakshan R, Abraham SB, Aiyappan R. Medication Adherence to Oral Hypoglycemic Drugs among Individuals with Type 2 Diabetes Mellitus - A Community Study. Indian J Community Med Off Publ Indian Assoc Prev Soc Med 2021;46(3):503–7.
12. Jaya AM, Harries AD, Rahman A, Khogali M, Chinnakali P, Gopal B. Compliance with Medication amongst Persons with Diabetes Mellitus during the COVID-19 Pandemic, Kerala, India: A Cross Sectional Study. Trop Med Infect Dis 2022;7(6):104.
13. Rani P, B P, Fathima A. Medication adherence in patients with Tyoe 2 Diabetes Nellitus- A Cross- Scetional study. Asian J Pharamceutical and Clinical Research 2019;12(10):177–80.

14. Afaya RA, Bam V, Azongo TB, Afaya A, Kusi-Amponsah A, Ajusiyine JM, et al. Medication adherence and self-care behaviours among patients with type 2 diabetes mellitus in Ghana. PloS One 2020;15(8):e0237710.
15. Rathish D, Hemachandra R, Premadasa T, Ramanayake S, Rasangika C, Roshiban R, et al. Comparison of medication adherence between type 2 diabetes mellitus patients who pay for their medications and those who receive it free: a rural Asian experience. J Health Popul Nutr 2019;38(1):4.
16. Tolley A, Grewal K, Weiler A, Papameletiou AM, Hassan R, Basu S. Factors influencing adherence to non-communicable disease medication in India: secondary analysis of cross-sectional data from WHO - SAGE2. Front Pharmacol 2023;14:1183818.
17. Qa K, Sd A, Jfm van B, R A. Self-reported medication adherence instruments and their applicability in low-middle income countries: a scoping review. Front Public Health [Internet] 2023 [cited 2024 May 7];11. Available from: https://pubmed.ncbi.nlm.nih.gov/37521968/
18. Shiomi M, Kurobuchi M, Tanaka Y, Takada T, Otori K. Pill Counting in the Determination of Factors Affecting Medication Adherence in Patients with Type 2 Diabetes: A Retrospective Observational Study. Diabetes Ther Res Treat Educ Diabetes Relat Disord 2021;12(7):1993–2005.
19. Kotian SP, Waingankar P, Mahadik VJ. Assessment of compliance to treatment of hypertension and diabetes among previously diagnosed patients in urban slums of Belapur, Navi Mumbai, India. Indian J Public Health 2019;63(4):348–52.
20. Venkatachalam J, Abrahm SB, Singh Z, Stalin P, Sathya GR. Determinants of Patient's Adherence to Hypertension Medications in a Rural Population of Kancheepuram District in Tamil Nadu, South India. Indian J Community Med Off Publ Indian Assoc Prev Soc Med 2015;40(1):33–7.
21. Karthik RC, Radhakrishnan A, Vikram A, Arumugam B, Jagadeesh S. Self-care practices among type II diabetics in rural area of Kancheepuram district, Tamil Nadu. J Fam Med Prim Care 2020;9(6):2912–8.
22. Suguna A, Magal AS, Stany A, Sulekha T, Prethesh K. Evaluation of self-care practices among diabetic patients in a rural area of Bangalore district, India.
23. S A, T M. Self Care and Medication Adherence among Type 2 Diabetics in Puducherry, Southern India: A Hospital Based Study. J Clin Diagn Res JCDR 2014;8(4):UC01-03.
24. Paudel G, Vandelanotte C, Dahal PK, Biswas T, Yadav UN, Sugishita T, et al. Self-care behaviours among people with type 2 diabetes mellitus in South Asia: A systematic review and meta-analysis. J Glob Health 2022;12:04056.
25. Thiagesan R, Soundari H, Kalpana B, Gopichandran V. "Makkalai Thedi Maruthuvam" scheme in Tamil Nadu: an intersectionality-based analysis of access to NCD care. Indian J Med Ethics 2023;VIII(3):203–9.
26. Srinath KM, Basavegowda M, Tharuni NS. Diabetic self care practices in rural Mysuru, Southern Karnataka, India - A need for Diabetes Self-Management Educational (DSME) program. Diabetes Metab Syndr 2017;11 Suppl 1:S181–6.
27. Rajeshwari A, Rani MA. Study on medication compliance among type 2 diabetes mellitus patients in a tertiary care hospital in South India. Int J Community Med Public Health. 2017;4(8):2851–4.
28. Deepa M, Rajkumar R, Suresh S, Mohan V. Awareness and knowledge of diabetes in Chennai–The Chennai Urban Rural Epidemiology Study [CURES-9]. J Assoc Physicians India. 2005 Apr;53:283–7.
29. Rani PK, Sathiyasekaran BWC. Health-seeking behaviour and compliance of diabetic patients in a rural area of South India. Int J Community Med Public Health. 2020;7(6):2404–9.
30. Krishnamoorthy Y, Giriyappa DK, Eliyas SK, Priyan S, Saya GK, Lakshminarayanan S. Patient and provider's experience and perspective in addressing barriers to medication adherence among noncommunicable disease patients in rural Puducherry, South India—A qualitative study. J Patient Exp. 2019;6(3):216–223. doi:10.1177/2374373518787288