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Original Research Article

Self-Care Behavior of Type 2 Diabetes Mellitus Patients at Urban Field Practice Area of Sri Krishna Medical College Muzaffarpur, Bihar

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Abstract

Background: Type 2 Diabetes Mellitus (T2DM) is an important public health problem both global and Indian level, accounting for high morbidity as well as mortality. Appropriate management of T2DM needs regular self-care behaviors such as dietary modification, increased physical activity, medication adherence, SMBG (self-monitoring of blood glucose) and foot care. Compliance with these guidelines is reported to be low, especially in urban areas of sedentary lifestyle and dietary transition.

Methods: A cross-sectional community-based study was carried-out from February 2025 to January 2026 among 100 diagnosed T2DM diagnosed patients of Urban Field Practice Area attached with the Sri Krishna Medical College & Hospital (S.K.M.C.H), Muzaffarpur. Data was obtained through pretested semi-structured questionnaire and Summary of Diabetes Self-Care Activities (SDSCA) scale. Descriptives statistics and the chi-square test were used, $p < 0.05$ was considered significant.

Results: Medication adherence was high (78%), but adherence to diet (48%), physical activity (42%), SMBG (35%) and foot care (40%) were less than optimal. Generally good SCB were reported in 51% of the sample. The presence of a higher educational level ($p = 0.02$), a longer duration of diabetes ($p = 0.04$) and higher levels of socioeconomic status ($p = 0.03$) were significantly related to good self-care practices.

Conclusions: Although the adherence to medication was good, lifestyle-related self-care behaviors were inadequate. Highly organized diabetes educating and community interventions should be promoted to enhance comprehensive self-management in the urban T2DM patients.

Keywords: Diabetes mellitus, Medication adherence, Self-care behavior, Type 2 diabetes, urban health.

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Introduction

Type 2 Diabetes Mellitus (T2DM) is described as one of the major metabolic diseases. Diabetes rising due to rapid urbanization, changes in physical activity and dietary patterns as well as an aging global population, now affects hundreds of millions of people worldwide [1].

The prevalence of diabetes among adults throughout the world has consistently been increasing over the past decade, with Type 2 Diabetes (T2D) as the most common form that accounts for almost 90–95% of all cases [2]. The disease is also linked with severe complications such cardiovascular diseases, nephropathy, neuropathy and retinopathy as well as peripheral vascular disease all of which result in significant morbidity and mortality and impose an enormous economic burden on the society [3]. India, the "Diabetes capital of the world", is also experiencing escalating prevalence rates for T2DM over the last two decades. The rate of diabetes is on the rise, especially in urban India [4]. Urban areas tend to have higher prevalence of diabetes than in rural areas, primarily due to lifestyle shifts and dietary habits with sedentary activity and work related pressure on increasing [5]. Control and management of T2DM are not limited to drug therapy, but it also depends on the adherence to self-care practices [6].

Self-care in diabetes is the daily work of individuals to maintain blood glucose and prevent complications. These behaviors are compliance to a dieting plan and the proper control of diabetes, being active on a regular bases, taking the medication at the right time, SMBG, and foot care

practices. Patients who participate in organized self-care have better glycaemic control, a decreased risk of complications and an enhanced quality of life [7].

Dietary control is critical to maintain glocemic stability. Moderate amounts of carbohydrate are important, reduced consumption of refined sugars and controlling portion sizes, so every meal should be a balance of all three nutrients: carbohydrates, proteins and fats [8,9]. Regular exercise improves insulin sensitivity and contributes to body weight control. Together, compliance to medications guarantees effectiveness of the treatment and regular monitoring of blood glucose early detects to adjust the therapy [10]. The diabetic foot care is important in preventing ulcers and amputation, both of which are prevalent causes of disability in diabetics [11].

Diabetes control is strongly impacted by urban lifestyle. Such as accelerated urbanization, increased consumption of processed foods, reduced physical activity by sedentary occupations, lack of open environments to practice exercise, and increased levels of psychosocial stress [12]. There is a need to assess selfcare practices at community level in order to address knowledge, attitudes and practices gaps of diabetic patients. The real adherence in daily life cannot be checked from the hospital-based data only. If executed at the community level, provides insights to behaviours of a certain population will help to clarify behavioural obstacles, socioeconomic status, educational status and cultural differences concerning the management of diabetes.

Objectives

1. To assess the dietary habits, physical activity status and medication adherence of type 2 diabetes mellitus patients in the study site.
2. To evaluate the frequency and regularity of blood glucose monitoring and foot care practices that have been made by the participants.
3. To find out the sociodemographic and clinical profile of good self-care behavior among Type 2 Diabetes Mellitus patients residing in urban field practice area.

Materials and Methods

Study Design: A cross-sectional community-based study was to determine the self-care practices among patients with T2DM. Cross sectional study was design to assess the prevalence of self-care practices and its associated factors at one point of time in a single population.

Study Setting: The research is conducted in the Urban Field Practice Area connected with S.K.M.C.H., Muzaffarpur. This as an urban field practice area is under the department of Community Medicine as a community outreach and training center, serving a particular sector in the urban areas. It offers preventive, promotive and one of basic curative health-care services and also keeps records of health of the registered households.

Study Duration: The research was carried out within one year, between February 2025 and January 2026. Data was collected on specified field visits and outpatient service days during this period.

Sample Size: A total of 100 patients were involved in the study. Sample size was based on feasibility and time limitations within the period of the study. The patients were conveniently selected from the registered list of diabetic attendees at the urban health centre. Attempts were made to include participants from varying social groups from the community.

Inclusion Criteria

- T2DM Diagnosed Cases of Type 2 Diabetes Mellitus
- Age ≥ 30 years
- Residing in the study area for a minimum of 6 months
- Willing to take part in the study with informed consent

Exclusion Criteria

- Patients with Type 1 Diabetes Mellitus
- Patients with gestational diabetes
- Critically ill or non-respondent subjects

Data Collection Tool

Data were collected using pretested semi-structured questionnaire to get information on Socio demographic profile, clinical profile and self-care measures. The survey questionnaire was organized in 2 sections.

The first section was related to the socio-demographic characteristics, including age, gender, education, occupation and socioeconomic status. The second part anlaysed diabetes-related factors such as duration of the illness, treatment type, and co-morbidities.

Self-care practice was measured with the SDSCA. The SDSCA scale is used to assess five major aspects of diabetes self-management: diet, exercise, medication taking, brush monitoring and foot care. The use of the tool was described to participants in their local language so they would understand and answer properly.

Statistical Analysis: The data was entered into the Microsoft excel and analyzed by SPSS software. Continuous variables were described using the

mean and standard deviation, with categorical variables expressed in terms of frequency and percentage. Chi-square test was used to verify the association of self-care behavior with some variables, $p < 0.05$ was considered to be statistically significant.

Ethical Consideration: This study was carried out with permission from the Institutional Ethics Committee of S.K.M.C.H. All patients gave written informed consent before data collection. The privacy of the participants' data was strictly guaranteed, and no data were used other than for research.

Results

Socio-Demographic Profile

Table 1: Socio-Demographic Characteristics of Study Participants (n = 100)

Variable	Category	Frequency	Percentage (%)
Age (years)	30–40	18	18%
	41–50	32	32%
	51–60	30	30%
	>60	20	20%
Gender	Male	58	58%
	Female	42	42%
Education	Illiterate	20	20%
	Primary	25	25%
	Secondary	35	35%
	Graduate & above	20	20%
Occupation	Unemployed/Housewife	30	30%
	Unskilled	25	25%
	Semi-skilled	25	25%
	Skilled/Professional	20	20%
Socioeconomic Status	Lower	35	35%
	Middle	45	45%
	Upper	20	20%

The majority of participants (62%) were over 50 years old, suggesting a greater incidence in older individuals. 58% of the participants were males. The majority of participants were secondary education (35%) and illiterate (20%). Almost 45% were from the middle economic class, signifying that diabetes is widespread in all socio-economic categories, however more prevalent in middle class society in this urban community.

Clinical Profile

Table 2: Clinical Characteristics of Participants (n = 100)

Variable	Category	Frequency	Percentage (%)
Duration of Diabetes	<5 years	40	40%
	5–10 years	35	35%
	>10 years	25	25%
Treatment Modality	Oral hypoglycemic agents	60	60%
	Insulin	20	20%
	Both	20	20%
Co-morbidities	Hypertension	45	45%
	Dyslipidemia	20	20%
	Both	15	15%
	None	20	20%

The diagnosis was made at less than 5 years among 40% of patients. Approximately 60% of the patients used oral hypoglycemic agents and insulin was required in 20%. The most prevalent comorbidity was hypertension (45%), testifying the concurrence of cardiovascular risk factors in diabetic patients.

Self-Care Behavior Findings: Self-care behavior was assessed using the SDSCA scale.

Table 3: Self-Care Practices Among Participants (n = 100)

Self-Care Component	Good Practice	Poor Practice
Diet adherence	48 (48%)	52 (52%)
Physical activity	42 (42%)	58 (58%)
Medication adherence	78 (78%)	22 (22%)
SMBG practice	35 (35%)	65 (65%)
Foot care practice	40 (40%)	60 (60%)

The level of drug adherence was high (78%), better than the compliance to prescribed therapy. But, adherence to diet and physical activity was not optimal in 48% and 42% of respondents. Only 35% performed SMBG on a regular basis and 40% practiced foot care. These results indicate that pharmacologic adherence is acceptable, but lifestyle-oriented self-care behaviours remain inadequate.

Association Analysis

Table 4: Association between Education and Overall Self-Care Behavior

Education Level	Good Self-Care	Poor Self-Care	p-value
Illiterate	6	14	**0.02**
Primary	10	15	
Secondary	20	15	
Graduate & above	15	5	
Total	51	49	

Higher educational level was marginally related with more favorable self-care behavior (p = 0.02), respectively. Graduates were more compliant than illiterates.

Table 5: Duration of Diabetes and Self-Care Behavior

Duration	Good Self-Care	Poor Self-Care	p-value
<5 years	15	25	**0.04**
5–10 years	20	15	
>10 years	16	9	
Total	51	49	

Duration of diabetes was also associated with better self-care practices (p = 0.04), due to greater exposure to counselling and experience higher degree of disease management practices.

Table 6: Socioeconomic Status and Self-Care Behavior

Socioeconomic Status	Good Self-Care	Poor Self-Care	p-value
Lower	12	23	**0.03**
Middle	25	20	
Upper	14	6	
Total	51	49	

A strongly positive relationship was found between the economic income category and the self-care behaviors (p = 0.03). High and medium social levels adhered more than the low ones.

The mid-level of the overall self-care behavior pattern is observed in the current cross-sectional study among participants with T2DM under urban field practice area. Although they were very compliant in medication, practice on lifestyle behavior, i.e., dietary control, physical activity, SMBG and foot care was inadequate. Higher level of education, longer disease duration and higher socioeconomic status were related to better self-care actions.

Discussion

This study had been conducted among T2DM patients under service area of S.K.M.C.H in urban location. Total self-care behavior displayed varied adherence patterns, where medication adherence had higher compliance than other self-care domains, including diet, physical activities, blood glucose testing/monitoring and foot care.

The high rate of adherence to treatment observed in this study could be due to frequent contact with health professionals, the availability of medication from city health services, and the possibility for patients to perceive medication as an action that is simple and easy to measure. Suboptimal adherence to diet and exercise could be reflective of urbanization related factors such as sedentary occupations, consumption of dense calorie foods in epidemic proportions, time poverty and lack of safe areas for physical activity. In the context of diabetes self-care, urban settings frequently encourage diet and activity patterns that are

unhealthy, countering essential components of daily living with diabetes.

Self-care attitude is determined by the level of awareness and literacy. Participants with at least education level of high school had also significantly better self-care adherence, revealing the role of health literacy in perception of the relevance for non-pharmacological measures. Poorer self-care was linked to illiteracy and lower educational levels, which results from other Indian studies where literacy had a positive relationship with knowledge and self-care performance.

From a public-health point of view, the study highlights crucial intervention fields. Pharmacological adherence is relatively satisfactory, however lifestyle modifications and routine measurements are not as satisfactory, leading to the risk of long-term complications. This shows a significant demand for structured diabetes education with focus on broader self-care including diet, physical activity, SMBG and preventive foot care.

Table 7: Comparing current study with existing study

Study	Study Type	Sample Size	Key Findings
Present Study	Community-based cross-sectional	100	Medication adherence high (78%), diet adherence (48%), physical activity (42%), SMBG (35%), foot care (40%). Education, longer duration of diabetes, and higher socioeconomic status were significantly associated with better self-care.
Study 1 [13]	Community-based cross-sectional	136	Moderate self-care seen. Highest compliance in medication (mean days/week), lowest in exercise; 38.2% classified as having good overall self-care. Higher education and female gender associated with better self-care.
Study 2 [14]	Facility-based cross-sectional	220	Diet and physical activity self-care were low; monitoring and drug adherence better. Significant association between SDSCA domains and glycemic control; regular glucose monitoring lacking.
Study 3 [15]	Cross-sectional	100	Majority (68%) had poor self-care practices across SDSCA domains. Medication adherence highest (95%), while other behaviors varied; indicates poor overall self-care.

Limitations

This study has certain limitations. The cross-sectional design limits any causal relationship between self-care behaviors and associated factors. The small sample of n= 100 cannot ensure sufficient power to generalize this finding to all urban diabetics. Self-reporting of self-care activities are subject to recall and social desirability biases, which may have overestimated adherence.

Conclusion

The average overall self-care behavior was moderate in the T2DM cases enrolled from urban field practice area of SKMCH Muzaffarpur for this community-based study.

Although the rate of adherence to medication was notably high (78%), various core components of diabetes self-management, including adherence to diet (48%), physical activity (42%), blood glucose monitoring (35%) and foot care practice (40%) were substandard. These data highlight the large gaps that are still present in comprehensive diabetes care, with respect to life-style-behaviors that substantially impact glycemic control and prognosis.

Specific gaps identified in this study include poor adherence to recommended diet and exercise, low utilization of self-monitoring strategies, and low levels of attentiveness to preventive foot care. The divergence between high adherence to medication and poor lifestyle behavior is possibly indicative in the urban scenario inadequate holistic education for self-care including lack of regular physical activity, while in urban environments where sedentary lifestyles and unhealthy food choices are prevalent.

The study highlights the importance of organized diabetes education programs for the urban community that focuses on not only drug compliance but also lifestyle modification, regular monitoring and prevention of complications. Community-based approaches such as regular health education, individual counselling and follow-up visits can impact in the sustainable self-care practice by patients. Enhancing the capacity of the urban health centers and engaging community-based workers into care provision for diabetes management could offer much-needed support that may serve to accelerate adherence to recommended practices.

Recommendations: Camps for diabetes education should be conducted periodically at urban and community health centres in order to promote knowledge of integrated self-care. Patients and parents need to be provided structured lifestyle

counseling with an emphasis on the importance of realistic diet plans and physical activity. Urban facilities that offer self-management education process, must be reinforced with skilled manpower and materials. Incorporation of follow-up, tracking and motivation by community health workers and volunteers can help in terms of adherence, especially among lower socioeconomic status and less educated populations.

Reference

1. S. M. Ganji, P. Kumar, J. Pichandi, M. S. Ganji Jr., and D. Varaprasad, "Effect of behavior change communication on self-care practices among adult type-2 diabetic patients in a semi-urban community of South India: A quasi-experimental study," Cureus, vol. 15, no. 5, 2023.
2. S. K. Gupta, P. V. M. Lakshmi, V. Chakrapani, A. Rastogi, and M. Kaur, "Understanding the diabetes self-care behaviour in rural areas: Perspective of patients with type 2 diabetes mellitus and healthcare professionals," PLOS One, vol. 19, no. 2, p. e0297132, 2024.
3. V. Kharol and M. Kharol, "A study to evaluate the effectiveness of health-care package on self-care management and prevention of complications in patients with type-2 diabetes mellitus in terms of the knowledge and practices in diabetic clinic of selected hospitals in Delhi," Int. J. Nursing Res., pp. 109–114, 2022.
4. K. Shah, S. A. Mishra, and P. Ravichandran, "Exploration of barriers to self-care practices among diabetic patients attending chronic disease clinic in an urban slum," Int. J. Noncommunicable Diseases, vol. 6, no. 4, pp. 193–198, 2021.
5. S. Letta, F. Aga, T. A. Yadeta, B. Geda, and Y. Dessie, "Poor self-care practices and being urban resident strongly predict chronic complications among patients with type 2 diabetes in Eastern Ethiopia: A hospital-based cross-sectional study," Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, pp. 2095–2106, 2022.
6. Eshete, S. Mohammed, T. Deresse, T. Kifleyohans, and Y. Assefa, "Association of stress management behavior and diabetic self-care practice among diabetes type II patients in North Shoa Zone: A cross-sectional study," BMC Health Services Research, vol. 23, no. 1, p. 767, 2023.
7. G. Molalign Takele, M. A. Weharei, H. T. M. Kidanu, K. G. Gebrekidan, and B. G. Gebregiorgis, "Diabetes self-care practice and associated factors among type 2 diabetic patients in public hospitals of Tigray regional state, Ethiopia: A multicenter study," PLOS One, vol. 16, no. 4, p. e0250462, 2021.
8. V. Durai et al., "Self-care practices and factors influencing self-care among type 2 diabetes mellitus patients in a rural health center in South India," J. Education and Health Promotion, vol. 10, p. 151, 2021.
9. S. K. Kumar Gupta, A. Rastogi, M. Kaur, S. Malhotra, and P. V. M. Lakshmi, "Foot self-care behaviour among people with type 2 diabetes mellitus living in rural underserved area of North India: A community-based cross-sectional study," Int. J. Lower Extremity Wounds, vol. 24, no. 3, pp. 678–690, 2025.
10. S. M. Hasan, M. Rahman, K. Nakamura, Y. Tashiro, A. Miyashita, and K. Seino, "Relationship between diabetes self-care practices and control of periodontal disease among type 2 diabetes patients in Bangladesh," PLOS One, vol. 16, no. 4, p. e0249011, 2021.
11. C. N. Okafor et al., "Self-care practices and the associated socio-demographic variables of persons with type 2 diabetes mellitus in southeast Nigeria," Nutrition and Metabolic Insights, vol. 17, p. 11786388241233534, 2024.
12. C. Enikuomehin, M. A. Olamoyegun, O. A. Ojo, G. D. Ajani, T. A. Akinlade, and O. A. Ala, "Pattern of self-care practices among type 2 diabetes patients in Southwest Nigeria," Nigerian J. Clinical Practice, vol. 24, no. 7, pp. 978–985, 2021.
13. Habibi Soola, M. Davari, and H. Rezakhani Moghaddam, "Determining the predictors of self-management behaviors in patients with type 2 diabetes: An application of socio-ecological approach," Frontiers in Public Health, vol. 10, p. 820238, 2022.
14. T. Babazadeh, Y. Lotfi, and S. Ranjbaran, "Predictors of self-care behaviors and glycemic control among patients with type 2 diabetes mellitus," Frontiers in Public Health, vol. 10, p. 1031655, 2023.
15. A. Tuha, A. Getie Faris, A. Andualem, and S. Ahmed Mohammed, "Knowledge and practice on diabetic foot self-care and associated factors among diabetic patients at Dessie referral hospital, northeast Ethiopia: Mixed method," Diabetes, Metabolic Syndrome and Obesity, pp. 1203–1214, 2021.