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Research Article

Lifestyle Management Among Type Ii Diabetes Mellitus Patients In A Selected Community Of Delhi

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I N F O

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A B S T R A C T

Introduction: Type 2 diabetes mellitus is a lifelong condition characterized by decreased insulin production by the pancreas and increased resistance to insulin action, causing hyperglycemia. It requires regulating blood sugar by oral hypoglycemic agents and/or insulin as well as major lifestyle management to aid in the control of blood sugar level as well as prevention of acute and chronic complications of diabetes mellitus, including a healthy diet, regular exercise, quitting alcohol and smoking, regular check-ups, blood glucose monitoring and adherence to prescribed medications.

Objective:

- To assess the knowledge regarding lifestyle management among type 2 diabetes mellitus patients
- To assess the practice regarding lifestyle management among type 2 diabetes mellitus patients
- To find the association between knowledge and practice with selected demographic variables

Methodology: The study was quantitative in nature with a descriptive survey design. Samples were selected using purposive sampling and comprised of 107 diabetic patients. The setting of the study was a resettlement colony, Sangam vihar, in South Delhi. The data were collected using a structured interview schedule and checklist. The result analysis was done using descriptive and inferential statistics.

Result: The major finding of the present study showed that 54.2% of the participants had average knowledge whereas 40.18% of participants had poor knowledge. In practice, 41.12% had fair practice and 42.99% had good practice related to lifestyle management of type 2 diabetes mellitus. No significant association was observed between the selected demographic variables with knowledge and practice scores.

Conclusion: The study reveals that even less than half of the participants had average knowledge and good practice related to lifestyle management of type 2 diabetes mellitus.

Keywords: Diabetes Mellitus Type 2, Lifestyle Management, Knowledge, Practice

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Introduction

Diabetes is a long-term condition where the body either does not produce sufficient insulin or is unable to utilize it properly, resulting in elevated blood glucose levels. In 2014, 8.5% of adults were diagnosed with diabetes, and in 2019, it was responsible for 1.5 million deaths, with nearly half occurring before the age of 70. Additionally, diabetes was linked to 460,000 fatalities due to kidney disease and accounted for 20% of deaths from cardiovascular issues. From 2000 to 2019, the mortality rates associated with diabetes rose by 3%, with a notable 13% increase in lower-middle-income nations.

Diabetes mellitus is known to be a leading cause of heart attacks, kidney failure, blindness, and amputations. These complications can be managed or prevented through a healthy lifestyle, regular check-ups, and appropriate treatment.

Strategies to prevent type 2 diabetes involve lifestyle modification, including a nutritious diet with plenty of lean proteins, whole grains, vegetables, and fruits; participating in consistent physical activity (moderate exercise for a minimum of 150 minutes per week); keeping a healthy weight; and quitting tobacco and alcohol. Regularly checking blood glucose levels, blood pressure and cholesterol can assist in early detection and management. Making these lifestyle adjustments can greatly lower the chances of developing diabetes or facing related complications.[1]

A study in the rural district of Sullia, Karnataka, from January 2014 to May 2015 found that only 24.25% of the 400 respondents had good knowledge of diabetes management. The majority were married males of Hindu faith, primarily from the upper middle class. Foot care was notably neglected among self-care practices. The study advocates for government policies to enhance diabetes management guidelines, community awareness programmes, and continuous education for healthcare providers to improve overall awareness and adherence to self-care practices.[2]

Lifestyle significantly impacts blood sugar control in diabetes patients. Awareness of effective lifestyle modifications, including exercise and dietary habits etc., are important aspects of diabetes management. Poor dietary choices can lead to increased calorie intake and poor glycemic control, while stress levels also affect glucose levels. Therefore, further studies are needed to assess their knowledge and practices regarding these modifications. So the researchers conducted this study to assess the knowledge and practice in the selected community of Delhi.

Methodology

This research employed a descriptive research design. The study was carried out in Sangam Vihar, a resettlement colony in South Delhi. The sample comprised patients with type 2 diabetes mellitus who could understand English or Hindi and were willing to participate in the research. Purposive sampling was used for this study. A structured interview schedule was developed on the basis of literature review, discussions with experts, and the investigator's personal experience in the field. The tool included three sections. Section I gathered information regarding demographic characteristics. Section II contained 30 items related to knowledge about lifestyle management for diabetic patients. Section III had items aimed at evaluating the reported practices of lifestyle management among diabetic patients. The analysis was conducted using both descriptive and inferential statistics.

Result

The analyzed data is organized and presented under four sections.

Section 1: Description of sample characteristics

This section is related to the distribution of characteristics of the study sample according to their demographic profile, like gender, marital status, age, educational level, family income per month, employment status, type of family, clinical variables, smoking, and alcoholism.

n=107

S. No	Demographic Profile	Frequency (f)	Percentage (%)
1.	**Gender**		
	Male	55	51.4%
	Female	52	48.6%
2.	**Age (years)**		
	31 to 40	4	3.7%
	41 to 50	36	33.6%
	51 to 60	40	37.3%
	> 60	27	25.23%

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3.	**Marital Status**		
	Single	4	3.7%
	Married	95	88.7%
	Widow	8	7.4%
4.	**Educational Level**		
	No formal education	30	30.2%
	Upto senior secondary	37	34.5%
	Graduation & above	40	37.3%
5.	**Employment status**		
	Unemployed	12	11.2%
	Employed	30	28.0%
	Pensioner	7	6.5%
	Own business	20	18.6%
	Housewife	38	35.5%
6.	**Family income per month (INR)**		
	< 5000	5	4.6%
	5001-10000	12	11.2%
	10001-20000	41	38.3%
	≥ 20001	49	45.7%
7.	**Type of family**		
	Nuclear	61	57.0%
	Joint	42	39.2%
	Extended	4	3.7%
8.	**Presence of comorbidity**		
	Hypertension	36	33.64
	Coronary Artery Disease	3	2.80
	Chronic Kidney Disease	2	1.86
	Obesity	16	14.95
	Hypothyroidism	6	5.60
	Other	4	3.73
	None	40	37.38
9.	**Duration since diagnosis of diabetes mellitus**		
	Less than one year	29	27.10
	One to five year	33	30.84
	Five to ten year	29	27.10
	More than ten years	16	14.95

The table 1 data shows that-

- 51.4% of participants were male and 48.5% of participants were female.
- Out of a total of 107 participants, 37.3% of participants were of the age group 51 to 60 years, 33.6% of participants were of the age group 41 to 50 years, 25.23% of participants were above 60 years of age and 3.7% of participants were of the age group 31 to 40 years.
- Regarding marital status, 3.7% of participants were single, 7.4% of participants were widows/widowers, and the rest 88.7%, of participants were married.
- 30.2% of participants had no formal education, 34.5% were educated till primary class, and 37.3% of participants were graduates out of a total of 107 participants. 11.2% of participants were unemployed, 28% of participants were employed, 18.6% of participants had their own business, and 35.5% were housewives.
- 4.6% of participants had a monthly family income below Rs.5000, 11.2% of participants had family income of Rs. 5001 to Rs. 10000, 38.3% for having a family income between Rs. 10001 to 20000 and 45.7% of participants were having a monthly family income of more than Rs. 20000.

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- 57.0% of participants belonged to nuclear families, 39.2% belonged to joint families and 3.7 had extended families.
- 37.38% of participants were having only diabetes mellitus and no other comorbid conditions, 33.6% of participants were also having hypertension, 2.8% were having coronary artery disease, 1.86% were having chronic kidney disease, and 14.95% were having obesity. 5.6% were having hypothyroidism, and 3.73% were having other co-morbidities.
- Out of 107 participants, 27.10% were diagnosed within the last 1 year, 30.84% were diagnosed within the last 5 years, 27.10% were diagnosed 5 to 10 years ago, and 14.95% were diagnosed more than 10 years ago.
- The majority, i.e., 57%, of the participants were having nuclear families followed by 39.20% in joint families, and only 3.7% were having extended families.
- 33.64 % were hypertensive, followed by 14.95% who were obese. 37.38% of them were not having any comorbidity.
- A total of 30.84% of participants were diagnosed with diabetes mellitus in the last five years.

SECTION II- Findings related to the knowledge score of diabetic patients regarding lifestyle management of diabetes.

This section deals with the assessment of the knowledge of the patient regarding lifestyle management of diabetes. The knowledge scores ranged from 0 to 30. The level of knowledge was categorized into the following groups: poor average (50%-75%), and good knowledge (above 75%).

Table 2.Level of knowledge of the diabetic participant regarding lifestyle management of diabetes

n=107

Level of Knowledge	Frequency	Percentage
Poor knowledge	43	40.18%
Average knowledge	58	54.20%
Good knowledge	6	5.60%

Level of knowledge as shown in table 2 depicts that obtained range of scores was 4 to 26 as against the possible range of scores of 0 to 30. The result revealed that 54.2% had average knowledge, while 40.18% had poor knowledge, and only 5.60% of the participants had good knowledge related to diabetes.

Section III: This section deals with the assessment of the expressed practices of the participants regarding lifestyle management of diabetes. The possible practice score ranged from 10 to50. The level of expressed practice is divided under the following headings: poor, fair and good practice based on the score.

Table 3.Level of expressed practice of the participants regarding lifestyle management of diabetes

Level of practice	Possible range of Scores	Frequency	Percentage
Poor practice	10-25	17	15.89%
Fair practice	25-37	44	41.12%
Good practice	38-50	46	42.99%

The data in table 3 shows that 15.89% of type 2 diabetes participants had poor practice, 41.12% had fair practice and 42.99% had good practice related to lifestyle management of type 2 diabetes mellitus.

Section- IV: This section includes data related to the association of selected demographic variables with knowledge and practice scores.

As seen in table 4, no statistically significant association was found between selected demographic variables with knowledge and practice score at $p < 0.05$.

Table 4.Association of selected demographic variables with knowledge and practice score.

S. No	Demographic Profile	Knowledge				Practice			
		Poor	Average	Good	Chi square value	Poor	Fair	Good	Chi square value
1	**Gender**								
	Male	25	26	4	2.344	11	24	20	2.534
	Female	18	32	2		6	20	26	
2	**Age Group (Years)**								
	31 To 40	3	1	0	6.695	2	2	0	7.609
	41 To 50	11	21	4		4	15	17	
	51 To 60	17	21	2		5	15	20	
	≥ 61	12	15	0		6	12	9	

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3	**Marital Status**								
	Single	3	1	0	4.383	0	2	2	1.259
	Married	35	54	6		15	39	41	
	Widow	5	3	0		2	3	3	
4	**Educational Level**								
	No Formal Education	14	13	3	2.974	8	11	11	3.679
	Primary education	14	22	1		4	16	17	
	Graduation or Above	15	23	2		5	17	18	
5	**Employment Status**								
	Unemployed	4	7	1	13.198	4	3	5	8.555
	Employed	11	16	3		5	16	9	
	Pensioner	5	2	0		1	4	2	
	Own Business	13	7	0		3	6	11	
	Homemaker	10	26	2		4	15	19	
6	**Family Income Per Month (INR)**								
	< 5000	5	0	0	9.617	1	2	2	4.139
	5001-10000	5	7	0		0	7	5	
	10001-20000	17	21	3		9	15	17	
	> 20001	16	30	3		7	20	22	
7	**Type of Family**								
	Nuclear	21	36	4	3.379	9	25	27	3.6555
	Joint	19	21	2		6	18	18	
	Extended	3	1	0		2	1	1	
8	**Presence of Comorbidities**								
	Hypertension	12	22	2	4.558	3	15	18	9.5399
	Coronary Artery Disease	2	1	0		0	2	1	
	Chronic Kidney Disease	1	1	0		0	1	1	
	Obesity	5	9	2		2	7	7	
	Hypothyroidism	3	3	0		0	2	4	
	Other	20	22	2		12	17	15	
9	**Duration Since Diagnosis of Diabetes Mellitus (Years)**								
	< 1	11	17	1	9.303	7	10	12	4.521
	1 To 5	8	22	3		4	17	12	
	5 To 10	16	10	2		4	9	15	
	> 10	8	8	0		2	7	7	

NS- not significant

Discussion

The results of the current study indicated that 42.99% of participants exhibited good practices, while 15.89% demonstrated poor practices; 54.2% had average knowledge, and 40% had poor knowledge. These results are consistent with a cross-sectional study conducted at a diabetic hospital in South Africa. The research utilized a structured questionnaire directed at diabetic patients. Baseline characteristics of the participants were gathered, and their knowledge, attitudes, and practices regarding lifestyle modifications were evaluated. The study's results showed that out of 217 participants, 154 (71%) were found to be obese, and 15 (7%) were classified as morbidly obese. About 92% of participants lacked knowledge about the

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importance and positive impact of weight loss, exercise, and a nutritious diet. Moreover, 97.7% displayed poor practices associated with lifestyle changes, though more than four-fifths (84.3%) possessed a positive attitude towards healthy lifestyle changes.[3]

Conclusion

The study was aimed to assess the knowledge practice regarding lifestyle management among type 2 diabetes mellitus patients in a selected community. It was seen that even less than half of the participants had average knowledge and good practice related to lifestyle management of type 2 diabetes mellitus. These findings indicate the need to further strengthen awareness programmes to include lifestyle modification.

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