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A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING LIFESTYLE MODIFICATION AMONG THE PATIENTS WITH DIABETES MELLITUS AT SELECTED COMMUNITY AREA, IN CHENNAI.

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Abstract:

Introduction: Diabetes mellitus, a chronic condition characterized by high blood sugar levels, necessitates effective self-management strategies, including lifestyle modifications. The study aims to assess the knowledge and practice regarding lifestyle modification among the patients with diabetes mellitus. **Methodology:** Descriptive research design was used for the study. Data was collected from the samples with non-probability convenient sampling techniques who met the inclusive criteria. **Result and Findings:** The study found that 32(64%) had adequate level of knowledge and 9(18%) had good practice. The findings of correlation show that diabetes mellitus patients had weak positive relation between knowledge and practice regarding lifestyle modification. The 'r' value is 0.14 as statistically significant. The mean and standard deviation of the level of knowledge and practice is 16.67±13.614 and 16.67±6.807 respectively. **Conclusion:** The study concluded that knowledge towards lifestyle modification in patients with diabetes mellitus were generally good. However, the result of practice on lifestyle modification was not good enough. It is a responsibility of the nurses to create understanding on the lifestyle modification for diabetes mellitus to reduce further complications in the patient.

Keywords: Diabetes mellitus, knowledge, practice, lifestyle.

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INTRODUCTION

Diabetes mellitus, a chronic condition characterized by high blood sugar levels, necessitates effective self-management strategies, including lifestyle modifications. These modifications typically encompass dietary changes, increased physical activity, and regular monitoring of blood glucose levels. The relationship between knowledge, attitude, and practice (KAP) regarding lifestyle modifications is well-documented, indicating that patients with a higher level of knowledge are more likely to engage in beneficial lifestyle practices.

Research indicates that a significant proportion of diabetic patients exhibit poor practices related to lifestyle modifications. For instance, a study conducted in Somalia found that 61.2% of respondents had poor practices regarding lifestyle modifications, which aligns with findings from Kenya where 75.6% of respondents also demonstrated inadequate practices in this area (Mohamud & Jeele, 2022). This suggests a concerning trend that may be prevalent in various regions, including Chennai, where similar socio-economic and educational factors may influence patient behavior.

Moreover, the adherence to lifestyle modification practices is significantly correlated with the level of knowledge possessed by patients. A study in Ethiopia highlighted that patients with good knowledge were three times more likely to adhere to lifestyle modification practices compared to those with poor knowledge (Geremew et al., 2023). This finding underscores the importance of educational interventions aimed at enhancing patients' understanding of diabetes management and the critical role of lifestyle changes in controlling the disease.

The role of healthcare providers in imparting knowledge about lifestyle modifications cannot be overstated. Effective communication and counseling by healthcare professionals have been shown to improve patients' knowledge and, consequently, their practices regarding diabetes management. For instance, a study indicated that patient education significantly improved the knowledge, attitude, and practice scores among diabetic patients (Kumar & Pandit, 2022). This emphasizes the need for healthcare systems to prioritize educational initiatives that equip patients with the necessary skills and knowledge to manage their condition effectively.

AIM OF THE STUDY:

The study aims to assess the knowledge and practice regarding lifestyle modification among the patients with diabetes mellitus

METHODOLOGY:

The study employed a quantitative approach. A non-experimental, quantitative descriptive research design was used in the study. The population consisted of 50 adult diabetes mellitus patients, diagnosed for 6 months to 5 years, and residing or attending treatment in Nerkundram. Convenient sampling technique was used to select participants. The research instrument included a demographic data section, a 15-item multiple-choice

questionnaire to assess knowledge, and a 10-item checklist to evaluate lifestyle modification practices. Knowledge was scored and categorized as adequate, moderate, or inadequate, while practice levels were rated as good, moderate, or low. A pilot study was conducted with 10 participants, after which no modifications were made to the tool. Data collection was carried out between 05/07/2021 and 11/07/2021 using face-to-face interviews, with health education provided at the end. Ethical clearance was obtained from the Institutional Review Board (IEC No. 134/2020/IEC/ACSMCH). The data was analyzed using descriptive and inferential statistics, including Chi-square tests to assess relationships between knowledge, practice, and demographic variables.

RESULT AND ANALYSIS:

Table 1: Demographic variables of patients. N=50

S.No	Demographic variables	Frequency (n)	Percentage (%)
1	**Age**		
	A.40-45 years	14	28
	B.46-50 years	9	18
	C. 51-55 years	13	26
	D. 56-60 years	10	20
	E. Above 60years	4	8
2	**Gender**		
	A. Male	25	50
	B. Female	25	50
3	**Educational qualification**		
	A.Secondary.	2	4
	B.Higher secondary	7	14
	C.Under graduate	7	14
	D.Post graduate	19	38
	E.Uneducated	15	30
4	**Marital status**		
	A. Married	40	80
	B. Unmarried	7	14
	C. Separated	1	2
	D. Widower/widow	2	4
5	**Occupation**		
	A. Government employee	7	14
	B. Private employee	15	30
	C. Unemployed	16	32
	D. self employed	7	14
	E. Daily wages	5	10

6	**Blood glucose level**		
	A. Above 300 mg/dl	1	2
	B.250-300 mg/dl	17	34
	C. 181-250 mg/dl	16	32
	D. 141-180 mg/dl	9	18
	E. 120- 140mg/dl	7	14
7	**Year of diagnosis**		
	A. 6months	12	24
	B. 7months-2years	16	32
	C.2years-4years	13	26
	D.4years-5years	9	18
8	**On treatment of**		
	A. Medications	35	70
	B. parenteral therapy	6	12
	C. Both OHA and parenteral	9	18
9	**Patients with any other comorbid illness**		
	A. Hypertension	18	36
	B. Epilepsy	2	4
	C. Cancer	1	2
	D. Renal problem	2	4
	E. Cardiac problem	27	54

Table 1 presents that some of the samples 14 (28%) were in the age group of 40-45 years, half of the samples 25 (50%) were males and females, few 19 (38%) were postgraduate, most of the samples 40 (80%) were married, some of the samples 16(32%) were unemployed, 17(34%) were having blood glucose level of 250-300 mg/dl, some of the samples 16(32%) were 7 months-2years of diagnosis, 35(70%) were on oral hypoglycemic agents, 27(54%) had comorbidities of cardiac problem.

Table 2: Knowledge and practice regarding lifestyle modification among patients with diabetes mellitus. N=50

VARIABLE	ADEQUATE		MODERATE		INADEQUATE	
	N	%	n	%	n	%
Knowledge	32	64%	12	24%	6	12%
Practice	9	18%	19	38%	22	44%

Table 2 depicts that 32(64%) had adequate level of knowledge, 12(24%) had moderate level of knowledge, 6(12%) had inadequate level of knowledge. And that 9(18%) had good practice, 19(38%) had moderate practice, and 22(44%) had low practice.

Table 3: Correlation b/w knowledge and practice among patients with diabetes mellitus. N=50

S. NO.	VARIABLES	Mean	SD	'r' value	Significance
1	Knowledge	16.67	13.614	0.014	Weak Positive relation
2	Practice	16.67	6.807		

Table 3 shows that diabetes mellitus patients had weak positive relation between knowledge and practice regarding lifestyle modification. The 'r' value is 0.14 as statistically significant. The mean score of knowledge and practice were 16.67±13.614 and 16.67±6.807 respectively.

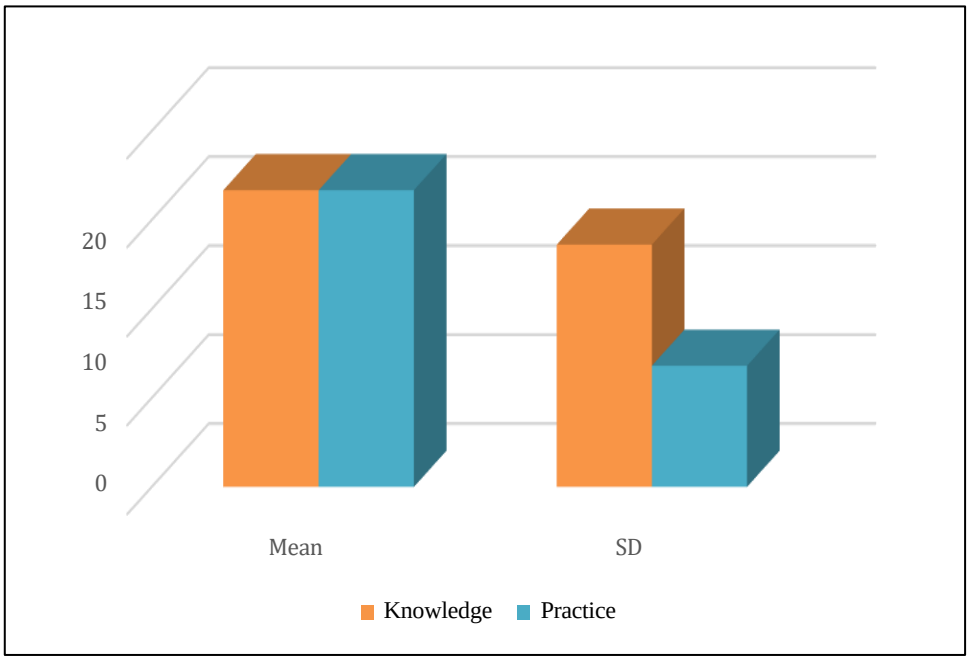

Fig: 1 represents the mean and standard deviation of knowledge and practice.

Table 4: Association of knowledge with diabetes mellitus with selected demographic variables.

S. No	Variables	Adequate		Moderate		Inadequate		Chi Square & its significance
		N	%	n	%	N	%	
1	**AGE**							7.77 p<0.05 NS
	40-45years	11	22	1	2	2	4	
	46-50 years	6	12	2	4	1	2	
	51-55 years	7	14	3	6	3	6	
	56-60 years	6	12	4	8	0	0	
	above 60 years	2	4	2	4	0	0	
2	**GENDER**							0.79 p<0.05 NS
	Male	17	34	6	12	2	4	
	Female	15	30	6	12	4	8	

3	**EDUCATIONAL QUALIFICATION**							
	Secondary	2	4	0	0	0	0	
	Higher secondary	3	6	4	8	0	0	11.87 p<0.05 NS
	Undergraduate	4	8	2	4	1	2	
	Postgraduate	16	32	1	2	2	4	
	Uneducated	7	14	5	10	3	6	
4	**MARITAL STATUS**							
	Married	25	50	9	18	6	12	
	Unmarried	6	12	1	2	0	0	6.013 p<0.05 NS
	Separated	0	0	1	2	0	0	
	Widower/widow	1	2	1	2	0	0	
5	**OCCUPATION**							
	Government	6	12	1	2	0	0	
	Private	13	26	1	2	1	2	
	Unemployed	10	20	5	10	1	2	12.83 p<0.05 NS
	Self employed	3	6	2	4	2	4	
	Daily wages	1	2	3	6	1	2	
6	**BLOOD GLUCOSE LEVEL**							
	Above 300 mg/dl	2	4	0	0	0	0	
	250-300mg/dl	10	20	5	10	2	4	
	181-250mg/dl	12	24	2	4	2	4	5.89 p<0.05 NS
	141-180mg/dl	4	8	2	4	2	4	
	120-140mg/dl	4	8	3	6	0	0	
7	**YEAR OF DIAGNOSIS**							
	6months	9	18	3	6	0	0	
	7months-2years	9	18	3	6	4	8	4.953 p<0.05 NS
	2-4years	9	18	3	6	1	2	
	4-5years	5	10	3	6	1	2	
8	**ON TREATMENT**							
	Medications	21	42	9	18	5	10	
	Parenteral	5	10	1	2	0	0	
	Both OHA and parenteral	6	12	2	4	1	2	1.515 p<0.05 NS
9	**COMORBIDITIES**					5	10	
	With comorbidities	17	34	6	12	1	2	2.098 p<0.05 NS
	Without comorbidities	16	32	5	10			

***S: Significant, NS: Non-Significant**

Table 4 shows that the selected demographic variables are found to be statistically non- significant association in knowledge on lifestyle modifications among diabetes patients at p<0.05 respectively.

Table 5: Association of Practice with diabetes mellitus with selected demographic variables

S. NO	VARIABLES	ADEQUATE		MODERATE		INADEQUATE		Chi Square & its significance
		n	%	n	%	n	%	
1	**AGE**							
	40-45years	3	6	6	12	5	10	
	46-50 years	4	8	4	8	1	2	16.73 p>0.05 S
	51-55 years	1	2	3	6	9	18	
	56-60 years	0	0	3	6	6	12	
	above 60 years	0	0	4	8	1	2	
2	**GENDER**							
	Male	6	12	9	18	10	20	2.381 p<0.05 NS
	Female	2	4	11	22	12	24	
3	**EDUCATIONAL QUALIFICATION**							
	Secondary	0	0	2	4	0	0	
	Higher secondary	0	0	1	2	6	12	11.66 p<0.05 NS
	Undergraduate	2	4	3	6	2	4	
	Postgraduate	5	10	7	14	7	14	
	Uneducated	1	2	7	14	7	14	
4	**MARITAL STATUS**							
	Married	5	10	18	36	17	34	
	Unmarried	3	6	1	2	3	6	6.55 p<0.05 NS
	Separated	0	0	0	0	1	2	
	Widower/widow	0	0	1	2	1	2	
5	**OCCUPATION**							
	Government	2	4	3	6	2	4	
	Private	4	8	4	8	7	14	
	Unemployed	2	4	8	16	6	12	7.38 P<0.05 NS
	Self employed	0	0	2	4	5	10	
	Daily wages	0	0	3	6	2	4	
6	**BLOOD GLUCOSE LEVEL**	0	0	2	4	0	0	
	Above 300 mg/dl	3	6	5	10	9	18	
	250-300mg/dl	4	8	6	12	6	12	6.37 P<0.05 NS
	181-250mg/dl	0	0	4	8	4	8	
	141-180mg/dl	1	2	3	6	3	6	
	120-140mg/dl							

7	**YEAR OF DIAGNOSIS**							
	6months	3	6	4	8	5	10	
	7months-2years	2	4	7	14	7	14	3.19
	2-4years	3	6	5	10	5	10	P<0.05 NS
	4-5years	0	0	4	8	5	10	
8	**ON TREATMENT**							
	Medications	6	12	14	28	15	30	0.85
	Parenteral	1	2	3	6	2	4	P<0.05 NS
	Both OHA and parenteral	1	2	3	6	5	10	
9	**COMORBIDITIES**							
	With comorbidities	7	14	8	16	8	16	6.65
	Without comorbidities	1	2	12	24	14	28	P>0.05 S

***S: Significant, NS: Non-Significant**

Table 5 shows that the demographic variable age and comorbidities found to be statistically significant and highly significant association in practice on lifestyle modifications among diabetes patients at $p<0.05$ respectively.

DISCUSSION

The study finding shows that 32(64%) had adequate knowledge, 12(24%) had moderate knowledge, 6(12%) had inadequate knowledge. The findings are supported by **Stella Folajole Usifon et al. (2020).** The study findings are that the majority of the participants 78 (78.8%) had good knowledge about lifestyle modification in controlling diabetes mellitus. The data expresses that 9(18%) had good practice, 19(38%) had moderate practice, and 22(44%) had low practice. The findings are supported by **Paul Ifeanyi Peter., et.al (2020).** Only 63.3% of the respondents engage in physical exercise on regular basis. This study concluded that despite the good knowledge of physical exercise and healthy dietary habits with regards to lifestyle modification the practice level is still low.

The result shows that diabetes mellitus patients had weak positive relation between knowledge and practice regarding lifestyle modification. The ‘r’ value is 0.014 statistically significant. The mean and standard deviation of the knowledge and practice on lifestyle modification among diabetes mellitus patients were 16.67±13.614 and 16.67±6.807 respectively. The findings are supported by **Henry I Okonta., et.al (2014).** Weak positive correlation between the knowledge and practice of ‘r’ value 0.037**.**

The demographic variable age and comorbidities found to be statistically significant and highly significant association in practice on lifestyle modifications among diabetes patients at $p<0.05$ respectively. There is no significant association between knowledge on lifestyle modifications among diabetes patients.

The findings are supported **by HMM Herath et al. (2017).** The association of age, gender was significant towards the practice and the other variable shows non-significant toward knowledge and practice. Hence Hypothesis was accepted.

CONCLUSION

The study concluded that 32(64%) majority had adequate knowledge about lifestyle modification in diabetes mellitus and only 9(18%) minimum population practiced lifestyle modification for diabetes mellitus. The study shows that knowledge towards lifestyle modification in patients with diabetes mellitus were generally good. However, the result of practice on lifestyle modification was not good enough. It is a responsibility of the nurses to create understanding on the lifestyle modification for diabetes mellitus to reduce further complications in the patient.

LIMITATION

- Sample size is limited to 50
- Data collection period is one week.

REFERENCES

1. Henry I Okonta, Gboyega A Ogunbanjo, John B Ikombele et al. (2014) African Journal of Primary Health Care and Family Medicine 6(1),1-6
2. Abdulkadir Mustefa Adem et al. (2014) type2 diabetes mellitus, lifestyle modification, knowledge, attitude and practice
3. Kumar v, Tripathi KM, Chauhan K.P, Singh K.P et al. (2013) Different non- pharmacological approaches for management of type 2 diabetes. joudibet. 1:6
4. World Health Organization screening for Type2 Diabetes et al. (2013). Reports of World Health organization and International Diabetic Federation meeting world Health Organization in Geneva
5. Fauci AS, Braunwald E, kasper DL, Hauser SL, Longo DL, Jameson JL, et al. (2013) editors. Harrison's principles of internal medicine.18th New York McGraw Hill.
6. Jean -Pierre Halle et.al (2013). The Management and Treatment of Type 2 Diabetes. Journal of diabetes in Canada s12:068
7. ICMR Guidelines for Management of Type 2 Diabetes et al. (2003). Non- pharmacological management of Diabetes Mellitus. ICMR GUIDE LINES.
8. MegersaYc et al. (2003). Prevalence of undiagnosed DM and its risk factors in selected institutions of at Bishoft town. Journal of Diabetes12:068
9. Shills ME et al. (1995). Modern Nutrition in Health and Disease, 8th USA Waiver, pp- 722-724
10. Kisokanth.G, Prathapan.S, Indrakumar et al. (2013) Factors Influencing Self- Management of Diabetes Mellitus; a review article. J Diabetes 3:1
11. Badrudin N, Basit A, Hydrie MZI, Hakeem R et al. (2002). Knowledge, Attitude and Practices of

patient visiting diabetes care unit. Pak J Nutrition.1:99-102

12. K. G. M. M. Alberti, P. Zimmet, J. Shaw et al. (2007). International Diabetes Federation: A Consensus on Type 2 Diabetes Prevention. Diabetes UK, 24:451–463
13. Binu. M.G, Manoj.P, Bhuvaneszwari.S et al. (2011). Pharmacological management of type 2 DM; International Journal of Clinical Cases and Investigations. Volume 2 (Issue 6), 27:34, p27-34
14. Seyoum B, Abdulkadir J, Gebregziabher F, Alemayehu B et al. (1999). Analysis of diabetic patients admitted to TikurAnbessa Hospital over eight years period. Ethiop J Health Dev. 13:9-13.
15. Gning SB, Thiam M, Fall F, Ba-Fall K, Mbaye PS, Fourcade L et al. (2007). Diabetes mellitus in sub-Saharan Africa: Epidemiological Aspects and Management Issues. Med Trop (Mars) 67(6):607–611.
16. Feleke F, Enquselassie F et al. (2007). An Assessment of the Health Care System for Diabetes in Addis Ababa. Ethiop.J. HealthDev.19(3) P203-210.
17. Worku D. et al. (2010). Patterns of Diabetic Complications at Jimma University Specialized Hospital, Southwest Ethiopia. Ethiop J Health Sci. Vol. 20, No. 1, P33-40
18. Abebe et al. (2014). Diabetes mellitus in North West Ethiopia: a community-based study. BMC Public Health 14:97
19. Al Bimani, Z.S. et al. (2014). Evaluation on T2DM related knowledge and practices of Omani patients.
20. ROSAL, et al. (2013). Opportunities and challenges for diabetes Prevention at Two Community Health Centers. DIABETES CARE. 31: 2, P247-254
21. Wk. Maina et al. (2010). Knowledge, attitude and practices related to diabetes among community members in four provinces in Kenya.
22. Gudina et al. (2011). Assessment of quality of care given to diabetic patients at Jimma University Specialized Hospital diabetes follow-up clinic, Jimma, Ethiopia. BMC Endocrine Disorders; 11:19.
23. Abyad et al. (2011). Knowledge and Practice of Type 2Diabetic Patients Attending Primary Health Care in Qatar. J fammed.9(4)
24. Oguntibeju OO, et al. (2012). Health Behavior and Quality of Life of Patients with Type 2 Diabetes Attending Selected Hospitals in South Western Nigeria. West Indian Med J.61 (6): 619-626.
25. HamoudNehad, Al AyoubiDh,VanamaJ, Yahaya H, Usman FH. (2013). Assessment of Knowledge and Awareness of Diabetic and Non-Diabetic Population towards Diabetes Mellitus in Kaduna, Nigeria. J AdvSci Res,3(3): 46-50