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"Assess awareness on self-care activity regarding lifestyle modification among diabetic mellitus patient in selected rural areas of Maharashtra".

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Abstract

Introduction: Diabetic mellitus is one of the most common noncommunicable diseases in India. The acute and chronic complications of Diabetic mellitus affect the physical, mental, and social well-being of the patient, thereby, causing heavy burden on the health care system. Previous research Studies have demonstrated that adequate self-care activity among the patients will facilitate good glycemic control and prevent complications.

Objectives: To assess the existing awareness regarding lifestyle modification on self-care activity among diabetic mellitus patient and To determine the association between awareness about self-care activity of diabetic mellitus patient with selected demographic characteristics.

Methods: This descriptive cross-sectional study was carried out among 110 diabetic mellitus patient in the selected rural area of Maharashtra the participants were interviewed on their diabetic status and various components of self-care activity adopted from The Summary of Diabetic Self-care activity regarding lifestyle modification questionnaire prepared by investigator and validated by experts. **Results**: Our study observed that the overall prevalence of self-care activity regarding lifestyle modification was very poor (58.18%). Average self-care activity was prevalent in 41.82% of the study. In our study, the association between self-care activities with educational status was found to be statistically significant.

Conclusion: this research study highlight on the need for awareness to be provided in rural areas regarding Diabetic mellitus care self-care activity. planned programs need to be organize to improve self care activity of diabetic mellitus patient to promote better health compliance regarding diet, exercise, adherence to drugs, and appropriate foot care regarding lifestyle modification.

Keywords: Awareness, Self-care Activities; diabetic mellitus, lifestyle modification, Rural Area

Introduction-

The incidence of Diabetic mellitus in India is high, with an estimated 10.1 crore (101 million) people living with the condition. This translates to a prevalence of around 11.4% of the country's population. Furthermore, about 25 million individuals are considered pre-diabetic, meaning they are at higher risk of developing Diabetic in the future. [1]

The prevalence of Gestational Diabetic Mellitus (GDM) in India is high, ranging from 3% to 35%, and is increasing. Studies in India have shown GDM affecting roughly 5 million women annually, and a national prevalence increase from 0.53% in 2015-16 to 0.80% in 2019-20. This prevalence is higher compared to Western countries.

Now day India is being a developing country has been facing the health problem of both communicable and noncommunicable diseases in nowadays among noncommunicable diseases, the prevalence of diabetic mellitus has been steadily increasing in the past few decades. India is home to 72.9 million people with Diabetic and is estimated to have the second-highest number of cases of DM in the world after China in 2017.[1] According to WHO explain that globally, Diabetic mellitus is a risk factor for premature mortality, cardiovascular and kidney diseases associated with unhealthy nutrition, physical inactivity or insufficient exercise, cigarette smoking, excessive consumption of alcohol, and inappropriate sleeping experience.[3]

According to 2016 WHO report, there were around 422 million adult Diabeticpatients.[4] But, in 2019 it was found to be 463 million people (9.3%) and can be projected to 578 million (10.2%) by 2030 and 700 million (10.9%) by 2045. This figure is 4% in low-income countries, which is increasing and becoming a public health concern globally.[5,6]

Lifestyle-related factors have been studied as a fundamental aspect in the onset and progression of type 2 Diabeticmellitus.[7, 8, 9] As risk factors that can be modified by lifestyle management, alcohol use, smoking, and sedentary behaviors are crucial considerations in Diabetic care. Experts recommend that diabetic patients quit smoking, not drink excessively, and engage in a certain amount of physical activity on a regular basis.[10] However; these behavioral factors are easily overlooked in clinical practice because their impact is difficult to quantify.

Additionally, there are conflicting opinions regarding lifestyle changes, which can lead to confusion among patients. It is often reported that moderate alcohol

consumption may have a beneficial effect on cardiovascular health [11, 12] There are also studies that concluded smoking cessation may increase the risk of Diabetic in the early period after quitting.[13] Physical activity is generally thought to be beneficial [14] but it is difficult to recommend given the diverse types of physical activity and differences in individual exercise abilities.

Objectives of the Study

1. To assess the existing awareness regarding lifestyle modification on self-care activity among diabetic mellitus patient in selected rural areas of Maharashtra.
2. To determine the association between awareness about self-care activity of diabetic patient with selected demographic characteristics.

Hypothesis:

H_1: There will be significant association between awareness of diabetic mellitus patient with selected demographic characteristics at 0.05 level of significance

Assumptions:

The study assumes that:

1. Diabetic mellitus patient do possess some knowledge regarding self-care activity in management of Diabetic mellitus.
2. The self-care ability of the patient increase with the duration of disease
3. The self-care ability of the patient is influenced by their level of knowledge
4. The diabetic patient have the ability to take care of themselves if they are properly guided and informed
5. Adequate knowledge will help the patient to take well informed decisions in managing the disease.

Delimitation:

The study is delimited to:

1. Diabetic mellitus patient from the selected village of Baramati
2. Diabetic mellitus patient who are available and willing to participate in the study
3. Diabetic mellitus patient who are already diagnosed with the disease and on treatment

MATERIAL AND METHODS:

Research Approach and Design:

A Quantitative research approach with descriptive research design was used in this study to assess the awareness of diabetic mellitus patient regarding self-care activity in diabetes mellitus.

Setting of the study:

The study was conducted in a selected rural village of Baramati tehsil. The setting was selected purposively. The criteria for selecting the setting were availability of the subjects, feasibility of conducting the study, economy of time and easy access, familiarity of the investigator with the setting and the expected cooperation and administrative approval for conducting the study.

Sample and Sampling Technique:

The sample of the study comprises 110 diabetic patient who were already diagnosed to have diabetic mellitus and on treatment were selected by using Non probability sampling –Purposive sampling technique. The following criteria were considered for sample selection:

Inclusion criteria:

- Patient with diabetes mellitus
- Patient willing to participate in the study
- Patient available during data collection
- Patient who can understand Marathi

Exclusion Criteria:

- Patient with no diabetes mellitus
- Patient who are bed ridden or dependent for their care on others

The Major Findings of the Study

Data Collection Tool and Technique:

After extensive review of relevant literature, a structured knowledge questionnaire was developed to assess the awareness of diabetic clients regarding self-care activity in diabetes mellitus. The questionnaire comprised of three sections: Section I: comprised of (07) items related to the sample characteristics. Section II: comprised of items (25) regarding the awareness of clients related to self-care activity of diabetic mellitus –includes the life style modification, exercise, prevention of complications etc. Content validity of the structured knowledge questionnaire was determined through a panel of experts. The data was collected by using interview technique. Institutional Ethical clearance, administrative approval was obtained from the concerned authorities; written informed consent was taken from the sample before commencement of the study.

Procedure for Data Collection:

Prior to the data collection formal administrative permission was obtained from the concerned Medical officer of Primary Health Centre that provides health care services to this village. Permission was also obtained from the village Panchayat president explaining the nature and purpose of the study. The data collection was in the month of March 2024. The data was collected from 03-03-24 to 31-05-2024. 110 clients who were fulfilling the inclusion criteria were selected by using purposive sampling. Self-introduction was given and

the nature of the study was explained to the study subjects. Written consent was obtained from each of the subjects. Data was collected by using structured knowledge questionnaire involving interview technique. The patients were assured of confidentiality and anonymity of their responses.

RESULTS:
The researcher used the appropriate statistical means for analysis of the data which include the following: Descriptive Statistics- Frequency (f), Percentage (%) and Mean (X), inferential statistics- Chi-square (X^2) Tests. The data and findings have been organized and presented under the following sections:

Section I:
Findings related to the demographic characteristics of the sample.

Section II:
Awareness regarding lifestyle modification on self-care activity among diabetic mellitus patient

Section III:
Determine the association between awareness about self-care activity of diabetic clients with selected demographic characteristics

Section –I: Findings related to the Sample Characteristics
Data presented in table-1 reveals that the majority of the diabetic clients 46 (41.82%) were from the age group of 41-50 years, followed by 38 (34.55%) from the age group of 51-60 years and 20 (18.18%) was above 60 years. Data presented in the table further shows that most of the diabetic clients 56 (50.91%) were males and 54 (49.09) were females. Majority of them 75 (68.18%) are married and 30(27.27%) were not widow and 4(3.64)were single. Data further reveals that, with regard to their educational level, 64 (58.18%) of them have completed their secondary education followed by 20 (18.18%) with primary education and 12 (10.91%) with higher education.04(3.64%) had completed education up to graduation level and above. 26 (23.64%) of the sample were self employed not working and 25 (22.73%) were involved in farming and 19 (17.27%) were housewife and followed by 18(16.36)involved in doing service. In relation to nature of work, most of them i.e., 76 (69.09%) were doing moderate work and 24(21.82%) were doing sedentary work as 10(9.09%)are doing heavy work.In relation to the type of family majority, 64 (58.18%) had joint family 31 (28.18%)had nuclear type of family and 9 (8.18%)had extended type of family.

Sr. No.	Variable	Groups	Participant	
			Frequency	Percentage
1	Age (in years)	below 40	6	5.45
		41-50	46	41.82
		51-60	38	34.55
		above 60	20	18.18
2	Gender	Male	56	50.91
		Female	54	49.09
3	Marital Status	Single	4	3.64
		Married	75	68.18
		Widow / Widower	30	27.27
		Separated	1	0.91
4	Occupation	Service	18	16.36
		Farmer	25	22.73
		Labour	22	20.00
		Housewife	19	17.27
		Unemployed	0	0.00
		Self-employed	26	23.64
5	Educational Status	Primary Education	20	18.18
		Secondary Education	64	58.18
		Higher Education	12	10.91
		Graduate	4	3.64
		Postgraduate	0	0.00
		Other	10	9.09
7	Type of family	Nuclear	31	28.18
		Joint	64	58.18
		Single parent	6	5.45
		Extended	9	8.18
		Blended	0	0.00

Section II:

Awareness regarding lifestyle modification on self-care activity among diabetic mellitus patient

Table 2: General assessments of self care activity

Variable	Groups	Score	Self care activity	
			Frequency	**Percentage**
Self-care activity	Poor	0-10	64	58.18
	Average	11-20.	46	41.82
	Good	21-29.	0	0.00
Self-care activity	Minimum		10	
	Maximum		14	
	Average (SD)		10.84 (1.16)	

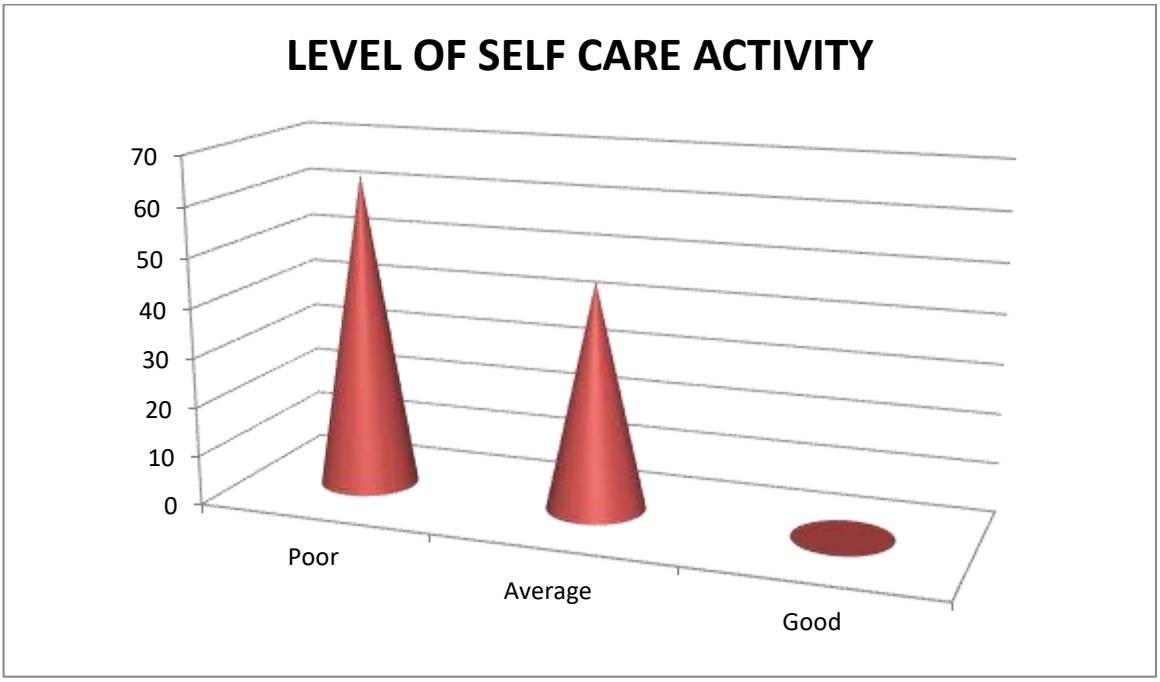

Figure No-1: General assessments of Practice - PRE and POST- Experimental

GENERAL ASSESSMENTS OF PRACTICE - PRE AND POST- EXPERIMENTAL

Poor practice (0–10), moderate practice (11–20), and good practice (21–29) were the three categories into which the overall practice score was split for assessment purposes.

Pre Test: 58.18% of patients with Diabetic mellitus in a selected rural area had poor lifestyle modification practices for self-care at the time of the pretest, 41.82% had average practices, and none had good practices. The mean practice score at the pretest was 10.84, with a 1.16 standard deviation. Practice scores ranged from a minimum of 10 to a maximum of 14.

Post Test: At the time of the posttest, which evaluated the lifestyle modification practice of patients with Diabetic mellitus in a few rural locations, none of them had poor practices, 19.09% had average practices, and 80.91% had good practices. When the posttest was administered, the average practice score was 23.25, with a standard deviation of 2.06. Practice scores ranged from 18 at the lowest to 27 at the highest.

Section III: determine the association between awareness about self-care activity of diabetic clients with selected demographic characteristics

ASSOCIATION OF AWARENESS SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

Table 2: Association of awareness with demographic variables

Variable	Groups	Awareness - Pre Test		Chi Square	d.f.	p value	Significance
		Below Md	Above Md				
Age (in years)	below 40	2	4	1.64	3	0.65	Not Significant
	41-50	27	19				
	51-60	23	15				
	above 60	12	8				
Gender	Male	33	23	0.03	1	0.87	Not Significant
	Female	31	23				
Marital Status	Single	2	2	0.86	3	0.83	Not Significant
	Married	44	31				
	Widow / Widower	17	13				
	Separated	1	0				
Occupation	Service	9	9	4.17	4	0.38	Not Significant
	Farmer	16	9				
	Labour	13	9				
	Housewife	8	11				
	Unemployed	0	0				
	Self-employed	18	8				
Educational Status	Primary Education	12	8	12.75	4	**0.013**	**Significant**
	Secondary Education	37	27				
	Higher Education	3	9				
	Graduate	2	2				
	Postgraduate	0	0				
	Other	10	0				
Type of family	Nuclear	18	13	0.54	3	0.91	Not Significant
	Joint	36	28				
	Single parent	4	2				
	Extended	6	3				
	Blended	0	0				

ASSOCIATION OF PRACTICE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

The chi square test was used to investigate the relationship between pretest practice scores for lifestyle modification on self-care among Diabetic mellitus patients in selected rural locations and demographic characteristics. The test was performed at a 5% level of significance.

Significant Association:

The p value of the association test with pretest practice was less than 0.05 for the demographic variables educational status and hospital admission after diabetic Mellitus diagnosis. This suggests that the practice of lifestyle modification for self-care among Diabetic mellitus patients in selected rural areas was linked to these demographic characteristics.

Concludes that, there was significant association of these demographic variables with the pretest practice.

No Significant Association:

The p value of the association test with pretest preparation was greater than 0.05 for the demographic variables, such as age, gender, marital status, etc. This indicates that these demographic factors had no influence on the lifestyle modification practices for self-care among patients with Diabetic mellitus in particular rural locations.

The study concludes that there was no significant association between these demographic characteristics and pretest practice.

Concludes that, there was no significant association of these demographic variables with the pretest practice.

Analysis data to determine the relationship between existing awareness and selected demographic characteristics of diabetes mellitus patients in a rural area in Maharashtra**.**

In this examines the frequency and percentage of data pertaining to the evaluation of Diabetic mellitus

patients' awareness of lifestyle modification for self-care in a selected rural area of Maharashtra.

LIMITATIONS:

1. The current study had its limitations in the form that the sample size was not large enough to generalize the results to the entire population.
2. Only self-reported and expressed self-care practices were taken into consideration.

RECOMMENDATIONS:

1. There is a need for health education on all aspect on diabetes like risk factors, complications, self-care and treatment for diabetic clients.
2. There is a need for individualized care and specific advice regarding self-care activity and its practices by medial Practioners at hospital as well as at community level.
3. Efforts to increase knowledge of diabetics about the disease, and the importance of changing their life style. Closing the gap between knowledge and practice among diabetics is needed.
4. Training and empowering of health care providers for delivering adequate health message. Media and non-governmental organizations should play a role in raising the awareness of diabetics in a simplified way.

CONCLUSION:

The overall awareness about diabetes among our patients was inadequate; there were critical gaps in awareness especially related to self-care activity, management of diabetes and complications was poor. The study reflects the poor awareness about diabetic mellitus in rural India. This emphasizes the need for increasing diabetes awareness activities in the form of mass campaigns in both rural and urban areas. These findings could be used to design patient Diabetic education programme to improve patient self-management. There is a need for health education on all aspect on diabetes like risk factors, complications, self-care and treatment for diabetic clients by medial Practitioner at hospital as well as at community level. Increased efforts thus needs to be put to develop easily accessible for Diabetic education programs which can no doubt decrease the morbidity and mortality associated with Diabetic .

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