

Study on Pattern of Self-Management Practices in Patients of Diabetes in Rural Population in Aligarh

Uzma Eram¹, Ambika Saraswat², Salman shah³, Anees Ahmad⁴

¹Associate Professor in the Department of Community Medicine, J N Medical College, AMU, Aligarh, ²MD in Community Medicine, JN Medical College, AMU, Aligarh, ³Assistant Professor in the Department of Community Medicine JN Medical College, AMU, Aligarh, ⁴Professor in the Department of Community Medicine, JN Medical College, AMU, Aligarh.

How to cite this article: Uzma Eram, Ambika Saraswat, Salman shah et. al. Study on Pattern of Self-Management Practices in Patients of Diabetes in Rural Population in Aligarh. Indian Journal of Public Health Research and Development/Volume 15 No. 1, January-March 2024.

Abstract

Self care involves all decisions which individuals, families, take for their own health particularly their own physical and mental well being. Staying fit, exercising, avoiding hazardous behavior etc. will all compound to self care. The aim of this study is to find the pattern of self care management practices in patients of Diabetes. A cross sectional study was done in registered villages of Rural Health Training Centre and 316 population was covered. All patients of the selected non communicable diseases above 18 years of age were selected who gave their consent. Self care practice assessment was done by including: Diabetes specific section including SDSCA measure - Summary of Diabetes Self- Care Activities Questionnaire. The findings showed that the prevalence of self-care practices in patients of diabetes was not very high. Slightly more than 50% diabetics were following good levels of self-care practices. Individual levels of self-care practices like medication, physical activity/ exercise, adequate diet, risky behaviours of tobacco intake and alcohol consumption, monitoring blood pressure/ blood sugar/ symptoms of COPD, weight management etc. showed varied prevalence. Mostly the patients with any non-communicable disease were found adherent to their medications. In patients of diabetes; age group, presently attending any health facility for disease management and receiving health care provider's advice for lifestyle modifications were associated significantly with self-care practices.

Key words: self care practices, diabetes, management

Introduction

Self care involves all decisions which individuals take for their own health particularly their own physical and mental well being. Staying fit, exercising, avoiding hazardous behavior etc. will all compound to self care⁽¹⁾. Self care can be performed in illness as well as the good health of an individual. Non communicable diseases include cardiovascular diseases, renal, nervous and mental diseases, musculoskeletal conditions, chronic non specific respiratory diseases (COPD), blindness, permanent

results of accidents, diabetes, senility, various other metabolic, degenerative diseases and chronic results of communicable diseases⁽²⁾. Out of all the above, four **non communicable diseases (NCDs)** make the largest contribution. Some of these are, namely, cardiovascular diseases, cancer, diabetes and chronic respiratory diseases⁽¹⁾. Non communicable diseases kill 41 million people each year, equivalent to 71% of all deaths globally as stated under the key facts by the World Health Organisation⁽³⁾. **Self-care** is not a new concept. About 50-60% of all care persons do for

Corresponding Author: Ambika Saraswat, MD in Community Medicine, JN Medical College, AMU, Aligarh

E-mail: manusn9422@gmail.com

themselves is actually self care as said by the Director General of WHO. Although it should not be used as a replacement to the basic component of essential health care. The aim of this study is to find the **pattern of self management practices in patients of Diabetes.**

Materials and Methods

A cross sectional study was conducted in Rural field practice areas of Department of Community Medicine, Jawaharlal Nehru Medical College, AMU, Aligarh. It included all the cases of *diabetes, hypertension and chronic respiratory diseases* in the study area. The study period was one year (December 2020-December 2021).

Sample Size

The sample size was determined by the formula,

$$n = Z_{1-\alpha/2}^2 PQ/L^2$$

Where, n = Sample Size

$Z_{1-\alpha/2}$: Statistic corresponding to level of significance. (1.96 for 95% CI)

P = Prevalence of health problems taken (26%)

Q = (1-P)

L = Absolute error (15%)

The final sample after rounding off came out to be 486 chronic disease patients.

Inclusion Criteria: All patients of the selected non communicable diseases above 18 years of age. All the patients who were residing in the rural areas of the field practice areas of the Department of

Community Medicine, J.N.M.C, A.M.U, Aligarh. All those patients who gave their consent for the study.

Exclusion Criteria: The patients who did not give consent. Terminally ill patients and those who were bedridden.

Written informed consent was taken before starting the interview.

Operational Definition of Diabetic Patient:

Any patient who was a resident of the field practice areas of RHTC, Department of Community Medicine who was above 18 years of age and was already diagnosed to be a patient of diabetes mellitus (Type I or type II) either at RHTC or at any other health facility. The patients who at their time of diagnosis had fasting plasma glucose of ≥ 126 mg/dl or postprandial blood glucose 2h-PG 200mg/dl at the time of diagnosis were enrolled⁽⁴⁾. Self care practice assessment was done by including: **Diabetes specific section including SDSCA measure - Summary of Diabetes Self- Care Activities Questionnaire**⁽⁵⁾.

The data collected was tabulated and analyzed using the IBM SPSS 20.0. Appropriate statistical tests were applied based on the type of variables. Ethical approval was taken for conducting the study from the Institutional Ethics Committee (Regd.) J.N. Medical College, AMU, Aligarh. (D.No. 176/FM/IEC, 3-11-2020). The designated period was one year but during the study duration, the government had to impose a lockdown from April 2021 to July 2021. So only **316** population was covered.

Results

Distribution of study participants based on the number of NCD's

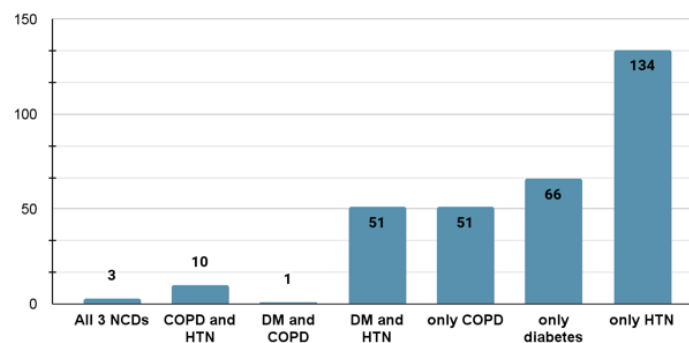


Figure 1: Distribution of the study participants based on the number of NCDs

According to the disease condition per se, 121 out of 316 participants (38.3%) had diabetes mellitus in

this study (Fig 1).

Overall level of self-care practice in diabetic patients (N=121)

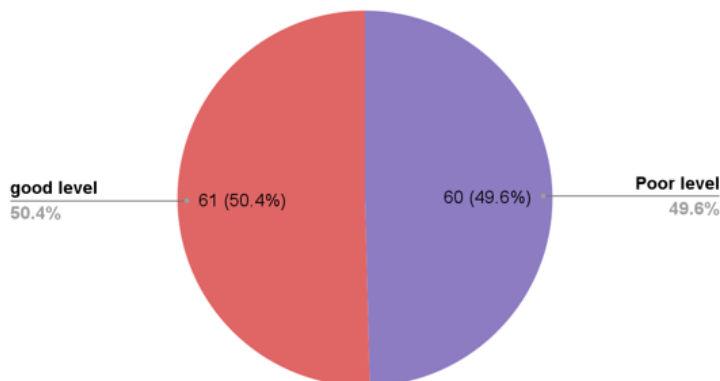


Figure 2

Prevalence of overall level of self-care practice

It was found (Fig 2) that 50.4% diabetic patients

were performing a **good level** of self-care practices in this study.

Table 1: Pattern of self-care management seen in diabetic patients (N=121)

Self-care management		
Have any complication ¹	Yes	56 (46.3)
	No	63 (52.1)
	Don't know	2 (1.7)
Any hospital admission related to diabetes and its complications ¹	Yes	21(17.4)
	No	100 (82.7)
Presently attending any health facility? ¹	Yes	109 (90.1)
	Not going for a treatment or monitoring	12 (9.9)
Specific diet self-care practice	(mean days/wk)	3.14± 1.19
On how many of the last 7 days did you eat five or more servings of fruits and vegetables?	(mean±SD) (mean days per week)	3.58± 1.69
On how many of the last 7 days did you eat high fat foods such as red meat or full fat dairy products?	(mean±SD) (mean days per week)	2.77±1.69
On how many of the last 7 days did you space carbohydrates evenly throughout the day?	(mean±SD) (mean days per week)	1.41± 1.32
Physical activity self-care practice	(mean±SD)	3.56± 4.28
Medication Usage self-care practice		5.47± 2.42
Foot care self-care practice	(mean days per week)	3.02± 0.84

Note: 1. N(%). The other values are depicted as mean ±standard deviation (S.D)

Can you recognise your symptoms?

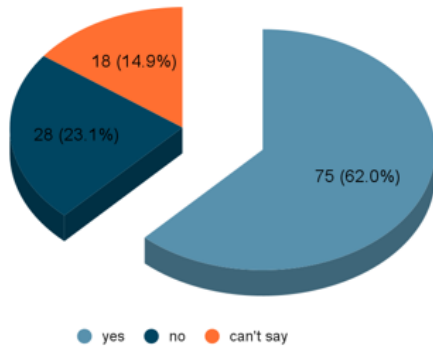


Fig 3: The above pie chart depicts the frequency distribution with respect to the ability of a diabetic patient to recognise his/her symptoms. (self-care management component)

In the pie chart shown above we find that a major part of the diabetic study population (62.0%) was able to recognise his/ her symptoms like fatigue, weakness, recurrent infections etc., followed by 23% of them unable to do so. Around 14.9% of study patients were unsure about this awareness level towards the disease.

Table 2: Association of overall level of self-care in diabetics with health system related variables. N=121

Health system related variable N=121		Poor level overall self-care practice 60(49.6)	Good level overall self-care practice 61(50.4)	Total N=121 N(%)	X ² , df, p value
Going to the same place every time for consultation	Yes	47(47.5)	52(52.5)	99 (81.8)	0.972, 1, 0.32
	No	13(59.1)	9(40.9)	22 (18.2)	
Did anyone ever brief you about the lifestyle modifications?	Yes	51(48.10)	55(51.9)	106 (87.6)	0.743, 1, 0.38
	No	9(60.0)	6(40.0)	15 (12.4)	
Any health insurance taken	Yes	1(16.7)	5(83.3)	6(5)	p= 0.207 (Fisher's Exact test)
	No	59(51.3)	56(48.7)	115(95)	
Approximate monthly expenditure on routine medicines	Upto rupees 200	21(45.7)	25(54.3)	46(38)	
	More than 200 rupees	29(47.5)	32(52.5)	61(50.4)	
	No expenditure	5(83.3)	1(16.7)	6(5.0)	
	Not remember	4(57.1)	3(42.9)	7(5.8)	
	No medicines taken	1(100)	0(0)	1(0.8)	

Table 3: Association of individual self-care practices in diabetics with the health system variables. N= 121

On how many of the last 7 days did you eat five or more servings of fruits and vegetables?					
Health system variable		Poor level of self-care practice (<4d/wk) N=55(45.5%)	Good level of self-care facility (>=4d/wk) N=66(54.5%)	Total N= 121 N(%)	X ² , df, p value
Presently attending any health facility	Yes	51(46.4)	59(53.6)	110(90.9)	5.028,1, 0.025
	Not going for monitoring and treatment	9(81.8)	2(18.2)	11(9.1)	
Briefed about LSM	Yes	48(45.3)	58(54.7)	106(87.6)	6.336, 1, 0.012)
	No	12(80)	3(20)	15(12.4)	
On how many of the last 7 days did you eat high fat foods such as red meat or full fat dairy products?					
		Poor level (>=3d/wk)	Good level (<3d/wk)		
Briefed about LSM	Yes	54(50.9)	52(49.1)	106(87.6)	4.475, 1, 0.034)
	No	12(80)	3(20)	15(12.4)	
Medication usage					
		Poor level of self-care(<7d/wk)	Good level of self-care(7 d/wk)		
Briefed about LSM	Yes	14(3.2)	92(86.8)	106(87.6)	(p=0.018), Fisher's exact test
	No	6(40)	9(60)	15(12.4)	

Discussion

Table 1 shows that more than 50% participants (52.1%) were not having any complication of diabetes like recurrent infections, foot ulcer, any documented blurring of vision, urinary tract infections or numbness and tingling sensation in hands and feet. A majority of them (82.7%) never got admitted in the hospital for any complication of diabetes Only a few (9.9%) of them were not going anywhere for treatment whereas most of them (90.1%) were presently attending a health facility. Specific diet subscale can be considered as a part of self-care management. It comprises 3 questions tabulated above. On asking about the last week's diet specific questions like "on how many of the last 7 days did you eat five or more servings of fruits and vegetables, eat high fat foods such as red meat or full fat dairy products and spaced carbohydrates evenly throughout the day?" We found that the mean days of this level of self-care per week was different for all; 3.58 ± 1.69 days, 2.77 ± 1.69 days, 1.41 ± 1.32 days per week respectively.

As these self-care components are not distinct compartments so same self-care practices can account for more than one component. So physical activity, medication usage and foot care are also considered as a part of self-care management.

The patients were focussing on their overall specific diet for $3.14 (\pm 1.19)$, eating specifically more than 5 servings of fruits and vegetables for $3.58 (\pm 1.69)$, high fat foods etc. on $2.77 (\pm 1.69)$ and spacing carbohydrates on only $1.41 (\pm 1.32)$ mean days per week. 62% were able to recognise their symptoms. Most of them were presently attending a health facility (90.1%), 46.3% had complications where only 17.4% had hospital admissions.

On the contrary, a study⁽⁶⁾ reported that 83.3% diabetics did not have any complications. The diabetic diet was followed for 5.47 ± 2.33 days/week. The lack of awareness about the low glycemic index foods, decreased knowledge imparted by the healthcare providers and the caregivers might have

led to decreased levels of diet self care performance in the present study population.

Table 2 shows that any briefing about lifestyle modifications by the health care provider, having a health insurance, going to the same health facility or doctor every time and approximate expenditure on medications, none of these health system variables were found to be associated with the overall level of self-care practices.

Table 3 explains that out of all those diabetic patients going to (90.9%) a healthcare facility presently, 53.6% were eating five or more servings of fruits and vegetables for more than four days in a week. On the other hand, 81.8% of those who were not going to any health facility presently had a poor level (eating more than five servings of fruits and vegetables for <4 days /week) of self-care for diabetes. (**p=0.025**)

86.8% of the patients who were briefed about lifestyle modifications in the past were using medicines on seven days of the week (good level of self-care) (**p=0.02**). Those who were briefed about lifestyle modifications, 54.7% of patients were eating five or more servings of fruits and vegetables for more than four days in a week. (**p= 0.012**)

Only 20% of the patients with no prior lifestyle modification advice received, were having high fat foods or dairy products on <3 days per week that is they had a good level of self-care. (**p=0.018**)

A study ⁽⁶⁾ found that diabetic self management can be predicted by healthcare provider patient communications. This finding is supporting our association between diet self care practices and briefing received for lifestyle modifications by the patients.

Active monitoring of symptoms is very necessary, as the only one can start monitoring and further act in order to manage them, accordingly⁽⁷⁾.

A study ⁽⁸⁾ reported that internal consistency for all the measures separately was found to be

acceptable (mean=0.47) except that of specific diet. Specific diet was found to be unreliable consistently (r=0.07-0.23). They concluded that SDSCA is a useful measure to be used in practice as well as researches related to the diabetic self management.

Conclusion

Self care knowledge should be given to the people suffering from NCDs by health workers. The healthcare providers across all tiers of the health system must be trained routinely for adequate evidence based lifestyle modification advice. At the level of the family; caregivers, spouses, children of the patients, all have a very important role in the adherence to self-care behaviours. Hence, caregivers should also be educated routinely. In Uttar Pradesh, particularly in Aligarh the state should be strengthening the health systems and the health workforce should be trained for routine monitoring and management of non-communicable diseases.

Conflict of interest: None

Source of funding: Self

References

1. Self_care_module.pdf [Internet]. [cited 2021 Dec 31]. Available from: https://www.who.int/ncds/management/Self_care_module.pdf
2. K.Park, 25TH Ed. Chap 6, Pg-391
3. Non communicable diseases [Internet]. [cited 2022 Jan 5]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
4. ADA 2019 Diabetes Management Guidelines (1).pdf.
5. Toobert DJ, Hampson SE, Glasgow RE. The summary of diabetes self-care activities measure: results from 7 studies and a revised scale. *Diabetes Care*. 2000 Jul 1;23(7):943-50.
6. Gunggu A, Thon CC, Whye Lian C. Predictors of Diabetes Self-Management among Type 2 Diabetes Patients. *J Diabetes Res*. 2016;2016:9158943.
7. Riegel B, Jaarsma T, Lee CS, Strömberg A. Integrating Symptoms Into the Middle-Range Theory of Self-Care of Chronic Illness. *Adv Nurs Sci*. 2019 Jul;42(3):206-15.