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RESEARCH ARTICLE

A study on compliance with diet, exercise, medication and regular follow up among diabetics attending tertiary care hospital

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Abstract

Compliance is a key concept in health care and affects all the areas of health care including diabetes. Non-compliance can occur due to the failure of patient. To have the medication dispensed or when it is not taken as instructed. Our objective is to determine the compliance of the patient with diet, medication and follow up among the diabetics. A Cross sectional study was conducted over a period of 3 months in medicine OPD of Basaveshwara Medical College and Hospital Chitradurga. Convenient sampling method was used. Semi structured questionnaire was prepared and used for the study to collect information regarding age, gender, maintenance of diet, exercise, awareness about medication and follow up. Informed consent was obtained before collecting the data. Data entered in excel sheet and analyzed statistically using SPSS software. Out of 100 people surveyed and assessed based on SDSA (summary of self-care activities measure) 70 were males and 30 were females. It was found that people belonging to the age group 40-49 were more compliant with Diet (44.6%), Exercise (59.4%) and Medication (52.6%) and Follow up (45.1%). Males had a good compliance with exercise (81.2%), diet (67.9%), medication (73.7%) and follow up (74.4%). The situation is far from ideal, especially with such a massive thrust being laid upon self-care in diabetes, these days. Information, Communication education to bring about behavioral change is the only way forward.

Keywords: Diabetes; diet; exercise; medication

Introduction

Adherence has been defined as the extent to which individual follows the instruction they are given for prescribed treatment. Thus, if a patient is prescribed an antibiotic to be taken as one tablet 4 times a day for a week for an infection but takes only two tablets a day, their adherence would be (10/28) = 36%. [1]

Adherence to treatment is a complex health behavior. Problems identified include the: individuals failing to initiate therapy, under using or overusing a treatment. Stopping a treatment too soon and miss-timing or skipping doses.

Diabetes is fast gaining the status of a potential epidemic more than 62 million diabetic individuals currently diagnosed with the disease. India currently faces an uncertain future in relation to potential burden that diabetes may impose upon the country. The etiology of diabetes may in India is multi factorial & include genetic factors coupled with environment influence such as obesity associated with rising level standards, urban migration & lifestyle changes. Rough estimates shows that the prevalence of diabetes in rural population is one quarter of urban population. [2]

Patients, Family members & health professionals have increasingly assumed active roles in the management of diabetes mellitus in response to care demands to manage the disease the patient engagement, the health professional training and family and social support are recommended. [3]

In this study the patient non-adherence was considered when the patient s behavior-taking following the diet & making required lifestyle changes do not correspond to recommendations agreed upon the health professionals. Knowledge about the variables can support the search for innovative & specific strategy; In care delivery to DM patients who do not adhere to the established treatment as well as; enhance the efficacy of the treatment and reduce the demand of high complexity health services. [4]

The prevalence of diabetes is stage is rising all over the globe at an alarm.Over the past 30 years the status of diabetes has changed from being considered as a mild disorder of the elderly one of the major cause of morbidity & mortality. [5] India has 69.2 million people being with diabetes i.e. 8.7% as per the 2015 data (According to times of India) - the diabetes capital of the world with an as many as 80million people suffering from type 2 DM.) [6]

An estimated 3.4 million deaths are caused due to high blood sugar level. It also estimated that 80% of diabetes deaths occur in low and middle income countries & project that such deaths will double between 2016 & 2030. It has been further estimated that the global burden of DM type 2 is expected to increase to 438 million people. Global prevalence of diabetes among adults over 18yrs of age has risen from 4.7% in 1980 to 8.5% in 2014. [7] NDTV REPORT-the current expenditure of diabetes treatment in India is approximately 95 USD (RS, 6000 person annum as per IDF atlas. [8]

Materials and Methods

A cross sectional study was conducted among 100 type 2 diabetes patients who came for checkup at tertiary health center in Chitradurga with a study period of three months. The sample was selected randomly from the patients attending Medicine OPD of a Basaveshwara Medical College and Hospital between January 2020 to March 2020 which includes 70 males and 30 females. semi structured questionnaire was prepared and used for the study to collect information regarding age, gender, maintenance of diet, exercise, awareness about medication and follow up. Assessment was based on SDSCA questionnaire, The SDSCA measure is a brief self-report questionnaire of diabetes self-management that includes: items assessing the aspects of diabetes regimen such as: food, exercise, medication follow up etc.

Data was collected and compiled in MS Excel. Analysis of the results was done in SPSS software version 20.0. Subjects were graded as good average and poor based on their total compliance score in each criterion {diet, exercise, medication, and follow up}

- 1/3 of total score –Poor, 1/3-2/3-Average, >2/3 –Good

Participants consisted of patients of type 2 diabetes mellitus that were under medication for at least three years. Nature of the study was explained to the participants and written consent was taken and confidentiality was maintained.

Results

Among total 100 participants, 70 were males and 30 were females. Majority belonged to the age group of 40 – 49 years (44%) followed by 50-59 years (25%).

Table 1 shows the effect of age and gender on compliance to their diet. Overall 56% were having good compliance compared to 44%. 44.6% in the age group of 40-49 years were having good compliance to their diet. As the age increased there was decrease in compliance. (p=0.131) Among 56 participants who had good compliance 38 (67.9%) were males and 18 (32.1%) were females. (p=0.598).

Among 100 study participants, 59% had average compliance to exercise, 32% had good compliance and 9% had poor compliance to exercise. Among participants who had good compliance to exercise majority belonged to age group of 40-49 years. (59.4%) and majority were males (81.2%).

When assessed for compliance to medication, it was found that 62% were having poor compliance and 38% were having average compliance. Among 38 participants who were having average compliance, 20 (52.6%) belonged to the age group of 40-49 years and 12 (31.6%) were in the age group of 50-59 years. Overall among males and females majority were having poor compliance to medication which can be improved by creating awareness.

Table 1. Distribution of study participants according to their compliance to diet in comparison with age and gender

Variable		Average diet (%)	Good diet (%)	Total	p Value
Age	30-39	7 (15.9%)	3 (5.4%)	10	0.131
	40-49	19 (43.2%)	25 (44.6%)	44	
	50-59	9 (20.5%)	16 (28.6%)	25	
	60-69	9 (20.5%)	8 (14.3%)	17	
	70-79	0	4 (7.1%)	4	
Gender	Male	32 (72.7%)	38 (67.9%)	70	0.598
	Female	12 (27.3%)	18 (32.1%)	30	
Total		44	56	100	

Table 2. Distribution of study participants according to their compliance to exercise in comparison with age and gender

Variable		Poor exercise (%)	Average exercise (%)	Good exercise (%)	Total (%)	P value
Age	30-39	0	9 (15.3%)	1 (3.1%)	10	0.41
	40-49	6 (66.7%)	19 (32.25%)	19 (59.4%)	44	
	50-59	0	17 (28.8%)	8 (25%)	25	
	60-69	3 (33.3%)	12 (20.3%)	2 (6.2%)	17	
	70-79	0	2 (3.4%)	2 (6.2%)	4	
Gender	Male	4 (44.4%)	40 (67.8%)	26 (81.2%)	70	0.088
	Female	5 (55.6%)	19 (32.2%)	6 (18.8%)	30	
Total		9	59	32	100	

Table 3. Distribution of study participants according to their compliance to medication in comparison with age and gender

Variable		Poor medication (%)	Average medication (%)	Total (%)	P value
Age	30-39	9 (14.5%)	1 (2.6%)	10	0.124
	40-49	24 (38.7%)	20 (52.6%)	44	
	50-59	13 (21%)	12 (31.6%)	25	
	60-69	13 (21%)	4 (10.5%)	17	
	70-79	3 (4.8%)	1 (2.6%)	4	
Gender	Male	42 (67.7%)	28 (73.7%)	70	0.529
	Female	20 (32.3%)	10 (26.3%)	30	
Total		62	38	100	

Table 4. Distribution of study participants according to their compliance to follow up in comparison with age and gender

Variable		Poor follow up (%)	Average follow up (%)	Total (%)	P value
Age	30-39	1 (5.6%)	9 (11%)	10	0.492
	40-49	7 (38.9%)	37 (45.1%)	44	
	50-59	5 (27.8%)	20 (24.4%)	25	
	60-69	3 (16.7%)	14 (17.1%)	17	
	70-79	2 (11.1%)	2 (2.4%)	4	
Gender	Male	9 (50%)	61 (74.4%)	70	0.041
	Female	9 (50%)	21 (25.6%)	30	
Total		18	82	100	

Overall, 82% had average compliance to follow up and 18% had poor compliance to follow up. Majority in each age group had average compliance. Compliance with follow up has been found to be equally poor in both males and females.74.4% males have average compliance with follow up as compared to females where 23.6% have average compliance to follow up.

In our study most of the participants had average or good compliance to their diet, exercise, medication and follow-up.

Discussion

This study was undertaken in tertiary health care centre among 100 diabetes patients to assess their compliance to diet, exercise, and medication and follow up. Majority of the patients are males. In our study, compliance was significantly associated with difference in the gender for follow up. This may be attributed to their better health care seeking behavior.

According to our study 59.4% of people who follow good exercise belong to the age group 40-49 years. In our study it was seen that 56% were compliant to diet, 32% were compliant to exercise, 38% for medication and 82% for follow up. In a study conducted by Santhan krishnana et al in South India it was found that, 77.7% were compliant to diet, 37.03% were compliant to exercise and 76.2% were compliant to medication. In this study it was also seen that 74.3% of age more than 50 years compliant to medication, but females (78.2%) were more compliant than males. [9]

According to our study 52.6% with an average compliance in medication belong to the age group 40 -49 years. According to the study done by Jansi rani natarajan et al on Diabetic compliance: a qualitative from the patients perspective in developing country, individuals with good compliance with medication belonged to the younger age group (35-40 years). [10]

According to our study 67.9% of people who followed good diet were males. According to the study done by Feaz Babwah et al too study the role of gender in compliance & attendance at an outpatient clinic for diabetes type 2 in Trinidad , it was found that women were more compliant to diet and medication than men (39.3% vs. 22.6% p<0.005). But women were more compliant to follow up than men. [9]

Conclusion

The situation is far from ideal, especially with such a massive thrust being laid upon self-care in diabetes, these days. Information, education and communication to bring about behavioral change is the only way forward. Emphasis also needs to be laid on counseling patients attending OPD regarding self-care in diabetes.

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