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A Study of Medication Adherence and Self-Care Practices among Type- 2 Diabetes Patients in Davangere

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ABSTRACT

Background: In Diabetes Mellitus self-care practices can lead to better prevention and control of complications. This study was conducted to assess medication adherence among Type-2 diabetes patients; to assess self-care practices among Type-2 diabetes patients; to identify factors associated with non-adherence to medication among Type-2 diabetes patients; and to identify factors associated with self-care practices among Type-2 diabetes patients.

Materials and Methods: This study was a hospital based cross-sectional study conducted among 100 cases at the diabetic clinics of JJM Medical college teaching hospital Davangere who gave informed written consent.

Results: Among 150 diabetic patients, 45% of the patients were highly adherent to their medication. 78% of the study subjects were following healthy eating plan on an average in the past month. Not even a single subject followed the self-care practice of monitoring of blood sugar.

Conclusions: In the present study majority of study subjects were adherent to medication. Significant association was observed between non adherence to medication and lack of emotional support from family and friends. Overall self-care practices were satisfactory except for self-monitoring of blood glucose level.

Key Words: Type 2 Diabetes Mellitus, medication adherence, self-care practices.

INTRODUCTION

World Health Organization (WHO) estimates that more than 422 million people worldwide have diabetes with prevalence of diabetes among adults over 18 years of age 8.5% as of 2014[1]. India was home to over 65 million diabetic patients in 2013. The country was also the largest contributor to regional mortality with 1,065,052 deaths caused due to diabetes 2013.[2] Diabetes Mellitus (DM) has emerged as a major health care problem in India[3]. Prevalence of diabetes mellitus in India varies from 5.6% in rural areas to 12.1% in major cities[4, 5]. It has been projected that the greatest absolute increase which will occur in number of people with diabetes will be in India[6].

Poor adherence to treatment of chronic diseases is a worldwide problem of striking magnitude. Recently, WHO stated that only 50% of patients diagnosed with chronic illness were fully compliant with their treatment regimen, in developing countries the rate being even lower.[1] Some Indian studies reveal very poor adherence to treatment regimens due to poor attitude towards the disease and poor health literacy among the general public.[7,8]

Apart from regular medications, activities such as healthy eating, being physically active, monitoring of blood sugars, good problem-solving skills and self-care practices can lead to better prevention and control of imminent complications.[7,8] In developing countries like India, limited resources, treatment costs, unequal distribution of health providers between urban and rural areas and cultural barriers

further hamper self-care practices.[9]with this background, the present study has been undertaken.

OBJECTIVES

The study was to assess medication adherence among Type-2 diabetes patients; to assess self-care practices among Type-2 diabetes patients; to identify factors associated with non-adherence to medication among Type-2 diabetes patients; and to identify factors associated with self-care practices among Type-2 diabetes patients.

METHODOLOGY

It is a hospital based Cross-sectional study conducted from1st June to 31st August 2016. A total of 150 cases were surveyed at the diabetic clinics of JJM Medical college teaching hospital, Davangere. Finally 100 cases who fulfils the following criteria were recruited for the study.

Type -2 diabetes patients diagnosed since at least one year, attending in teaching hospitals of JJM medical college, Davangere and patients aged between 18 to 60 years were included for the study.

Patients with severe physical or cognitive impairments, pregnant women with diabetes and patients not willing to give consent were excluded.

Medication adherence to diabetes medication was determined using the self-reported Morisky Medication Adherence Scale (MMAS-8). The total scale has a range of 0–8, including low adherence (<6), medium adherence (6–7), and high adherence (8)[10].

The information regarding self-care activities among patients with diabetes was collected using the revised version of summary diabetes self-care activities questionnaire (SDSCA)[11]. It is a validated questionnaire used in various settings. The revised SDSCA consists of five components on diet, exercise, blood sugar testing, foot care and smoking. We excluded the smoking component since we have already asked about the smoking history in the socio-demographic section of the questionnaire. Under each section, the participants were asked to respond in past seven days how often they were able to practice the self-care behaviors. Based on their responses, the scoring was done on an ordinal scale of 0–7. The pattern is uniform for all aspects. Prior to the onset of the study, the questionnaire was translated into local language and pre-tested among small group of patients with diabetes and necessary modifications were made in terms of comprehensibility and content of the questionnaire.

Data collection from these 100 diabetics started after getting institutional ethical review board clearance. All subjects were informed about the purpose of study and interviewed after obtaining informed consent and assuring confidentiality.

Data was analysed using SPSS v17.0 and presented in the form of descriptive statistics (means, percentages). Chi square test was employed. P value <0.05 was considered statistically significant.

RESULTS

In the present study 45% of the patients were highly adherent to their medication 18% of the patients were found to poorly adherent (non-adherent) (table 1). The mean score was found to be 6.89±1.28 SD.

Table 1: D**istribution of study subjects according to medication adherence**

Adherence (Score)	Subjects (N=100) (%)
High adherence (8)	45 (45)
Medium adherence (6-7)	37 (37)
Poor adherence (<6)	18 (18)

Table 2: distribution of study subjects according to practice of self care

Self Care Practices	Optimum Self Care (80%)*	Number (%)	Mean And SD
Diet			
Follow a Healthy eating plan	5 days a week	77 (77)	5.66±2.15
Following the plan on avg in the last month	5 days a week	78 (78)	5.74±2.02
5 or more fruit or vege**table** servings	5 days a week	36 (36)	3.15±2.51
High fat intake	Nil or once a week	69 (69)	1.22±.56
Exercise			
Physical activity a min of 30 mins	5 days a week	55 (55)	4.22±3.96
Specific exercise	5 days a week	42 (42)	3.26±3.20
Blood Sugar Self Monitoring			
Blood sugar testing	7 days a week[27]	0 (0)	.20±402
Recommendation by physician	7 days a week	0 (0)	.45±500
Foot Care			
Check their feet	5 days a week	69 (69)	4.96±2.97
Check inside their shoes	5 days a week	45 (45)	3.24±3.39

*(80% of the adherence to self care practices was considered as optimum self care)

Table 3: Distribution of study subjects according to factors influencing non adherence to medication (n=18)

Variables	Medication adherence		p value
	No (%)	Yes (%)	
Sex			
Male	9 (50)	31 (37.8)	0.91
Female	9 (50)	51 (62.2)	
Cost effect			
Effect on subjects	11 (61.1)	39 (47.6)	0.29
No effect	7 (38.9)	43 (52.4)	
Emotional Support			
Present	16 (88.9)	49 (59.8)	0.018*
Absent	2 (11.1)	33 (40.2)	
Age			
31-40	1 (5.6)	9 (11)	0.49
41-50	3 (16.7)	21 (25.6)	
51-60	14 (77.8)	52 (63.4)	

*p ≤ 0.05 is significant

Table 4: Factors influencing non adherence to self care practices

Characteristics	Adherence to self care		P value
	No (%)	Yes (%)	
Sex			
Male	26 (63.4)	14 (23.7)	0.561
Female	15 (36.6)	45 (76.3)	
Cost effect			
Effect on subjects	12 (29.3)	13 (22)	0.411
No effect	29 (70.7)	46 (78)	
Emotional Support			
Present	30 (73.2)	40 (67.8)	0.564
Absent	11 (26.8)	19 (32.2)	
Age			
31-40	4 (9.8)	6 (10.2)	0.380
41-50	7 (17.1)	17 (28.8)	
51-60	30 (73.2)	36 (61)	

*p ≤ 0.05 is significant

As shown in table 2 self-care practices were assessed using SDSCA questionnaire. In the present study 78% of the study subjects were following healthy eating plan on an average in the past month, followed by 77% of subjects were following a healthy eating plan for the last 7 days .Not even a single subject followed the self care practice of monitoring of blood sugar.

Out of 100 patients, 18 were found non-adherent to medication. Among non-adherent to medication, 50% were males and 11(61%) had effect of cost on them, 16(88.8%) had emotional support from family members and 14(77.7%) belong to the age of 51 to 60. Significant association was observed between non adherence to medication and emotional support from family and friends (Table 3).

By using 3 point Likert scale used to assess adherence and non-adherence on the scores obtained by SDSCA questionnaire. It is found that 41 subjects were not adherent to self-care practices.

Out of 100 patients,41 were found non-adherent to self-care practices. Among non-adherent to self-care practices, 26(63%) were males and 12(29 %) had effect of cost on them, 30(73.1%) had emotional support from family members and 30(73%) belongs to the age 51 to 60. None of these factors were significantly associated with non adherenece to self-care practices (Table 4).

DISCUSSION

In the present study 18% of the patients were found non-adherent to medication. Our study result is higher than study conducted by Atta Abbas[12] 7%, and lower than study conducted by Mohammed MM[13]. Kishor Khotkar[14] (65%), Muhammed Ali[15] (45.2%), Thurston MM[16] (65.1%), Shaimol T[17] (35.3%), J Fadare[18] (26.6%) , Manjusha Sajith[19] (21.90 %).

In the present study 45% of the patients were highly adherent to their medication. Our study result is higher than study conducted by Kishor Khotkar[14] (1%), Atta Abbas (8.2%), Mohammed MM[13] (9.0 %), Shaimol T[17](21.8%), J Fadare[18] (40.6%), Manjusha Sajith[19] (40.95%) lower than study conducted by Muhammed Ali[15] (54.8%), ArulMozHi S[20] (49.3%).

In our study 78% of the study subjects were following healthy eating plan which is higher than the study conducted by D Rajasekharan[21],Irvine AA[22] (20%). Shyamsundar Jagdish[23] (19%).

In the present study 69% checked their feet daily which is higher than study by Victor Mogre[24] (13.9%), Berhe K[25] (66.6%). Irvine AA[22] reported Foot care was sporadic.

In the present study not even a single subject followed the self-care practice of self-monitoring of blood sugar but study by Shyamsundar Jagdish[23] (16%), Victor Mogre[24] (29.9%) and D Rajasekharan[21] (76.6%) reported study subjects follow self-care practice of self-monitoring of blood sugar.

In the present study 42% were participated in a specific exercise session (3.26±3.20 days per week) which is higher than study by Victor Mogre[24] (5.19 %), Irvine AA[22] , Shyamsundar Jagdish[23] (40%) and lower than study by Berhe K[25] (53.1%).

In the present study none of factors like age, sex, cost and emotional support from family were significantly associated with non adherence to medication.In the study conducted by Ashebir Kassahun et al[26] , Different factors like side effect and complexity of regimen, failure to remember, and sociodemographic factors were associated with medication nonadherence. In the study conducted by Gabriel waari[27] factors like side effect; patients

with duration disease between 2-10 years, ever being admitted for diabetes mellitus, dissatisfaction with family members support, were significantly associated with nonadherence.

In the present study emotional support from family was significantly associated with non-adherence to self-care practices. In a study conducted by Hiren D[28] education, housewives, Single/ever married, patients lived in nuclear family, less duration since diagnosis, patients on insulin were more adhered to dietary practices. In a study conducted by **Abdullah Alhariri[29]** urban residents, employees and those who had diabetes for a duration ≤5 years were more adherent to self-care practices.

CONCLUSIONS:

In the present study majority of study subjects were adherent to medication. Significant association was observed between non adherence to medication and lack of emotional support from family and friends. Overall self-care practices were satisfactory except for self-monitoring of blood glucose level.

LIMITATIONS:

In the present study socio demographic variables, duration and complications due diabetes mellitus were not taken into consideration.

RECOMMENDATIONS:

Effective strategies to educate the patients to utilise existing facilities in public health care sector. Counselling of family members to provide emotional support to diabetic patients to improve medication adherence should be emphasized. Patients should be oriented and reoriented about the importance of routine self-monitoring of blood glucose. Door step monitoring of blood glucose level by frontline health care providers could be an effective strategy to improve the glycaemic control.

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