Health status of Diabetic Male and Female patients - A Comparison

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Abstract

Diabetes mellitus, a chronic metabolic disease, is characterized by an increase in the blood-glucose level resulting from a relative insulin deficiency or insulin resistance or both. As a consequence, it can lead to glycation of tissues, which proceeds with acute metabolic disturbances and ends with organ damage with severe health deteriorations. The present study was conducted in Rohtak District, Haryana to assess the health status of diabetic male and female patients. A total of 300 Diabetic patients (40-60 Years) were prepared by gathering information from patients coming to various hospitals and also through personal contacts. Majority of female patients, 79 percent were suffering other complications with diabetes. Also79 percent female patients were taking insulin injection while 20 percent female and 14 percent male patients followed two meal patterns. Various complications like hypertension, obesity, heart disease and G.I disease were observed in most of the patients.

Keywords: Diabetes mellitus, Glycation, Patients, Complications, Hospitals.

Introduction

Diabetes mellitus, a chronic metabolic disease, is characterized by an increase in the blood-glucose level resulting from a relative insulin deficiency or insulin resistance or both. As a consequence, it can lead to glycation of tissues, which proceeds with acute metabolic disturbances and ends with organ damage with severe health deteriorations. Research studies over the years, reported that the worldwide prevalence of diabetes mellitus appears to be increasing alarmingly. It is estimated that 5.4% of total population would be affected with the disease by the year 2025 as initial reports showed 4.0% in the year 1995. Thus, proper management should be done in order to treat diabetes mellitus and its complications [1]

When someone has diabetes, their body can't maintain healthy levels of glucose in the blood. Glucose is a form of sugar which is the main source of energy for our bodies. Unhealthy levels of glucose in the blood can lead to long term and short term health complications. For our bodies to work properly we need to convert glucose (sugar) from food into energy. A hormone called insulin is essential for the conversion of glucose into energy. In people with diabetes, insulin is no longer produced or not produced in sufficient amounts by the body. When people with diabetes eat glucose, which is in foods such as breads, cereals, fruit and starchy vegetables, legumes, milk, yoghurt and sweets, it can't be converted into energy. Instead of being turned into energy the glucose stays in the blood resulting in high blood glucose levels. After eating, the glucose is carried around your body in your blood. Blood glucose levels can be monitored and managed through self care and treatment [1,2,3].

About a third of people living with T2DM have family members with diabetes [4] and pose a forty per cent risk of developing diabetes. The incidence of T2DM is not limited to particular age groups, and can affect any person of any age. In Indians, T2DM is developing at a younger age compared to their European counterparts, with an increase in incidence seen in urban populations as compared to the rural population in India. Age-standardized prevalence of diabetes has increased in an urban population in India [5,6] many studies do not comment on differences between genders as a risk factor for T2DM [7,8,9]. Contrary to this, however, the prevalence of T2DM was higher in men than in women in a study conducted on Caucasians in the UK [10,11]. Women are generally considered at lower risk of cardiac-related morbidity and mortality than men. It is globally believed that diabetes erases this advantage in females and increases the risk of coronary heart disease to a greater extent than in men [12].

When a subject with T2DM cannot be managed with diet and oral hypoglycemic agents, insulin is introduced for better management of the condition. Insulin therapy in T2DM supplements endogenous insulin and is often given as a single injection before breakfast or at bedtime. Most insulin treated obese subjects with T2DM can be managed with three meals and a bed time snack [13,14]. Many of them receive sulphonylurea therapy as well as insulin because this combination decreases the amount of insulin required. When diabetes and obesity occur together, over eating is a major contributor to the hyperglycemia in the insulin treated individuals, so any reduction in energy intake reduces insulin requirements [15]. Treatment with insulin or insulin secretagogues requires consistency in timing of meals and carbohydrate content. Multiple insulin dosing regimens allow for a more flexible food intake and lifestyle in persons with T2DM [16].

Material and Methods

The present study was conducted on Diabetic patients in the age group of 40-60 years. Total 300 patients i.e. 150 Male and 150 Female were selected proportionality for the study from patients coming to various hospitals like Civil Hospital, P.G.I and Private Nursing Homes at O.P.D time of Rohtak District ,Haryana and also through personal contacts. Health status of diabetic patients assessed by a well structured interview schedule was prepared in accordance with the methodological procedure keeping in view the objectives of the investigation. The interview schedule was pretested initially, based on the responses obtained and difficulties realized, suitable amendments will be made to make it more functional.

Results and Discussion

The information regarding Age, Sex, Education qualification, Marital Status, Occupation, Income and Activity presented in Table – I. 46 percent of the patients were in the age group of 40-50 years, followed by 53 percent in 51-60 years of age. 50 percent patients were male and 50 percent were female.

Table 1: Socio- Economic profile of Diabetic Patients (n=300)

Characteristics	Frequency	Percentage
Age		
40-50 years	139	46.33
51-60 years	161	53.66
Sex		
Male	150	50.00
Female	150	50.00
Education Qualification		
Uneducated	37	12.33
Primary	42	14.00
Middle	36	12.00
Metric	69	23.00
Sr. Secondary	34	11.33
Graduate	56	18.66
Post Graduate	26	8.66
Marital Status		
Single	11	3.66
Married	228	76.00
Widow	39	13.00
Divorced	18	6.00
Separated	4	1.33
Occupation		
Private Service	68	22.66
Govt. Service	62	20.66
Business	55	18.33
Agriculture	11	3.66
House Wife	84	28.00
Retire	20	6.66
Income		
Up to 50,000	114	38.00
50,000 to 1 lac	126	42.00
1 lac to 1.5 lac	37	12.33
1.5 lac to 2 lac	17	5.67
2 lac to 2.5 lac	6	2.00
Activity		
Sedentary	225	85.00
Moderate	38	12.66
Heavy	7	2.33
Food Habits		
Vegetarian	**164**	**54.67**
Non – Vegetarian	**84**	**28.00**
Weekly consume	12	4.00
Fortnightly consume	20	6.67
Monthly consume	34	11.33
Occasionally consume	18	6.00
Eggetarian	**52**	**17.33**
Daily consume	16	5.33

Weekly consume	22	7.33
Fortnightly consume	6	2.00
Monthly consume	8	2.67

Maximum patients (23%) were having Metric education followed by Graduate (18%) and 14 per cent up to Primary, while 12 per cent with middle and almost similar percentage (12%) were illiterate and 11 per cent were educated up to Sr. Secondary and 8 per cent of patients were Post Graduate. Majority of patients (76%) were married followed by 13 per cent Widow while 6 per cent were Divorcee and other 3 per cent were Single and remaining 1 per cent was separated. Majority of patients (28%) were House wife followed by 22 per cent were Private Service while 20 per cent Govt. Service and other 18 per cent were in Business and other 6 per cent are retired and remaining 3 per cent were in Agriculture. Majority of subjects (42%) had monthly income 50,000 to 1 Lac followed by 38 per cent with up to 50,000 while 12 per cent with monthly income 1 Lac to 1.5 Lac and other 5 per cent with monthly income 1.5 Lac to 2 Lac and only 2 per cent was between 2 Lac to 2.5 Lac. Majority of patients (85%) were sedentary workers followed by 12 per cent were moderate workers while remaining 2 per cent were heavy activity workers.

Majority of patients (54%) were vegetarian followed by 28 percent Non-vegetarian from them (11%) were consuming Monthly and (6%) were taking Fortnightly same (6%) were eating Occasionally and remaining (4%) consumed weekly although (17%) were Eggetarian from whom (7%) were consuming egg weekly and (5%) were eating daily while (2%) were having monthly and same (2%) consumed Fortnightly.

The data regarding prevalence of complication has been presented in Table 1. Seventy two percent male patients were suffering with other complications with diabetes while 27 percent patients were having no other complications with diabetes. Those who had complication- Majority of male patients (12%) were obese while 11 percent suffering from hypertension and seven percent males suffering with obesity + renal problem followed by ischemic heart disease (6%) ,hypertension + obesity(6 %) as well as same six percent were having double vision + bulimia nervosa while four percent males having G.I disease and there were similar percentage (4%) male patients suffering with liver disorder and also 4 percent male patients suffering with hypertension + renal problem followed by hypertension + ischemic heart disease (3%), hypertension + G.I disease (3%), renal problem (2%) and double vision (1%).

Table 2. Frequency and percentage distribution of patients according to presence of Complications in relation to sex at the time of diagnosis of diabetes.

Complications	**Male(150)**	**Female(150)**
NoComplications with Diabetes	41(27.33)	31(20.67)
Complications Observed with Diabetes	109(72.67)	119(79.33)
Hypertension	17(11.34)	41(27.34)
Obesity	18(12.00)	9(6.00)
Ischemic heart disease	10(6.67)	8(5.33)
Double vision	2(1.33)	6(4.00)
G.I. disease	7(4.67)	6(4.00)
Renal problem	3(2.00)	8(5.33)
Liver disorder	6(4.00)	2(1.33)
Hypertension + Obesity	9(6.00)	7(4.67)
Hypertension + Ischemic heart disease	5(3.33)	5(3.33)
Hypertension + G.I. disease	5(3.33)	6(4.00)
Hypertension + Renal problem	7(4.67)	2(1.33)
Obesity + Renal problem	11(7.33)	6(4.00)
Double vision + Bulimia nervosa	9(6.00)	13(8.67)

In female patients, Seventy nine percent female were suffering with other complications with diabetes while 20 percent patients were having no other complications with diabetes. Those who had complications- Maximum female patients (27%) suffering from hypertension, eight percent were having double vision + bulimia nervosa, six percent females were obese while five percent suffering from ischemic heart disease as well as also five percent females were having renal problem followed by double vision (4%),G.I disease (4%) same four percent having hypertension + obesity and also four percent female suffering from hypertension + G.I disease and again same four percent suffering from obesity + renal problem while three percent female patients suffering with hypertension + ischemic heart disease and only one percent females having liver disorder and there were also one percent females having hypertension + renal problem.

Table 3. Frequency of insulin injection intake during special condition in relation to sex and blood sugar check up followed by selected diabetic patients.

The data regarding intake of insulin and blood sugar check up has been presented in Table 2. On sex wise distribution, it was found that majority of male and female patients (82 and 79%) have not ever taken insulin injection while 18 percent male and 20 percent female have taken insulin injection. Nine percent male patients have taken insulin in any complication followed by eight percent

taken on regular basis whereas 12 percent female have taken insulin in any complications and eight percent have taken on regular basis due to high blood glucose level.

Insulin injection taken	**Male(150)**	**Female(150)**
Yes	27(18.00)	31(20.67)
No	123(82.00)	119(79.33)
If yes, Condition		
Regular	13(8.67)	13(8.67)
Complication	14(9.33)	18(12.00)
Blood sugar Examination		
Daily	23(15.33)	27(18.00)
Weekly	54(36.00)	49(32.67)
Fortnightly	37(24.67)	41(27.33)
Monthly	31(20.67)	32(21.33)
Quarterly	5(3.33)	1(0.67)

Majority of male patients (36%) followed weekly blood sugar checkup followed by 24 and 20 percent who followed fortnightly and monthly blood sugar checkup pattern respectively while15 percent male followed daily blood sugar check up pattern and only three percent patients followed quarterly blood sugar checkup pattern. In female patients, maximum females (32%) followed pattern of weekly blood sugar checkup followed by 27 and 21 percent who followed fortnightly and monthly blood sugar checkup pattern respectively while 18percent females followed daily blood sugar check up pattern.

Table 4. Meal Pattern and feeling of patients on avoidance of sweet dishes and psychological craving for sweet dishes observed by selected diabetic patients in relation to sex.

The data regarding meal pattern and feeling of patients on avoidance of sweet dishes has been presented in Table 1. On sex wise distribution, it was found that Maximum male patients (66%) followed three meal patterns while 19 percent patients followed 2 meal and remaining 14 percent patients followed 4 meals pattern. whereas Majority of female patients (65%) followed three meal patterns while 20 percent patients followed 2 meal and remaining 14 percent patients followed 4 meals pattern.

Meal Pattern	**Male(150)**	**Female(150)**
2 Meals	21(14.00)	31(20.67)
3 Meals	100(66.67)	98((65.33)
4 Meals	29(19.33)	21(14.00)
Avoidance of sweets		
Yes	102(68.00)	106(70.67)
No	48(32.00)	44(29.33)
Psychological Craving		
Yes	50(33.33)	52(34.67)
No	100(66.67)	98(65.33)
Patients Responses		
Self control	24(16.00)	28(18.67)
Family control	6(4.00)	5(3.33)
Take little	12(8.00)	5(3.34)
Take fruits	2(1.33)	3(2.00)
Take salty biscuits	2(1.33)	10(6.67)
Add alternative sweeteners	3(2.00)	2(1.33)
Feel disturb		
Yes	48(32.00)	48(32.00)
No	102(68.00)	102(68.00)

Majority of males (68%) were avoiding sweet dishes followed by 32 percent were not avoiding sweets and seventy percent of female patients were avoiding sweet dishes while 29 percent had taken sweets in their diet. Maximum male and female patients (66 and 65%) reported no psychological craving for sweet dishes while 33 percent male patients and 34 percent female patients had psychological craving for sweets .Majority of them, male patient (16%) and female patient (18 %) have self control to avoid sweets while 8 percent male patients satisfied their psychological craving by taking a little of sweets. four percent male were control their feeling by their family pressure. Some male patients had taken alternative sweeteners or fruits or salty biscuits instead of sweets and six percent female patients satisfied their psychological craving by taking salty biscuits while some of the female patients were control their craving by their family pressure and some females had taken a little of sweets, or fruits or alternative sweeteners instead of sweets

Sixty eight percent male patients and also 68 percent female patient were not feeling disturbed if sweets were completely avoided by them followed by 32 percent male patients and same 32 percent female patients were feeling disturbed. Anger, irritation and frustration were found as the consequence of psychological craving for sweets in both sex.

Conclusion

The present study was conducted to determine the Health status of Diabetic Patients.(40-60 Years). For this study, a total of Three hundred Diabetic patients in the age group of 40-60 Years i.e. 150 male and 150 female were drawn proportionately from the randomly selected Hospitals of District Rohtak. The study suggested that female should take more care of themselves and take precautions about the diseases so that they can take care of herself and family.

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