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Research Article

Prevalence and Dietary Intake and Lifestyle Pattern of Diabetic Patients of Allahabad

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Abstract

Rapid changes in diet and life style of people are leading to increased incidence of chronic diseases including diabetes mellitus. Diabetes is the single most critical metabolic disease, which affects nearly every organ and system in the body. Diabetes mellitus is a metabolic disorder characterized by chronic hyperglycaemia with decrease ability or complete inability of the tissues to utilise carbohydrates, by change in the metabolism of fat, protein, water and electrolytes. Diabetes is on increased in India. The multicentre ICMR study showed a prevalence of 2.5 per cent in the urban areas and 1.8 per cent in rural population above the age of 15 years. The revised WHO figures for the year 2025 is 57.2 million diabetics in India. The average age for the onset of diabetes is around 40 years while it is around 55 year in other countries. In this study total 60 respondents were selected from Nazareth hospital and Military Hospital and they were personally interviewed with the help of pretested questionnaire by visiting the study area. The dietary intake was calculated by using dietary recall method and compared with RDA. Biochemical parameters were collected from recent reports of the respondents. To figure out all the observations it can be concluded thatincidence of diabetes is more among 40-50 age group people, The average intake of macronutrients and micronutrients were less than the RDA given by ICMR. Respondents biochemical profiles were higher than the normal range. Changes in dietary pattern and lifestyle Pattern were recommended through counseling.

Keywords: Metabolic Disorder; Chronic Hyperglycaemia; Dietary Intake; Biochemical Parameters

Introduction

Diabetes is a prevalent systemic disease affecting a significant proportion of the population worldwide. The effects of diabetes are devastating and well documented. There is increasing evidence that in certain pathologic states, especially chronic diseases, the increased production and/or ineffective scavenging of reactive oxygen species (ROS) may play a critical role. High reactivity of ROS determines chemical changes in virtually all cellular components, leading to lipid peroxidation. Production of ROS and disturbed capacity of antioxidant defense in diabetic subjects have been reported. It has been suggested that enhanced production of free radicals and oxidative stress is central event to the development of diabetic complications. This suggestion has been supported by demonstration of increased levels of indicators of oxidative stress in diabetic individuals suffering from complications. Therefore, it seems reasonable that antioxidants can play an important role in the management of diabetes. There are many reports on effects of antioxidants in the management of diabetes.

Among the MN deficiencies, iron deficiency anaemia (IDA) is the most serious public health problem. Estimates of IDA in women and children have varied from 50-70%; pregnant women being particularly susceptible. Iodine deficiency disease (IDD) is another worrisome public health problem. Though, its magnitude has declined in recent years after the introduction of iodised salt, the problem still persists, and not confined to the Sub Himalayan regions as earlier thought. Fortunately, some of the severe vitamin-deficiency diseases such as beri beri (thiamine-

vitamin B1 deficiency), pellagra (niacin deficiency), and scurvy (vitamin C deficiency) have disappeared. Blindness due to vitamin A deficiency and rickets due to vitamin D deficiency remain as clinical rather than public health problems. However, milder clinical manifestations and biochemical (sub-clinical) evidence of these deficiencies is rampant. Also osteoporosis in adults, particularly women after menopause due to calcium and vitamin D deficiency is common.

It is a group of metabolic disorders characterized by hyperglycemia resulting from defects in insulin secretion insulin action or both diabetics affects 2- 3% of the world population [1]. It is a chronic disorder of carbohydrate, fat and protein metabolism.

Materials and Methods

The study on "Prevalence and dietary intake and lifestyle pattern of diabetic patients of Allahabad" was conducted in Nazareth Hospital and Military hospital, Allahabad. A three stage sampling procedure was adopted for the study in which 60 respondents from Nazareth Hospital and Military Hospital of Allahabad were selected. The cross-sectional descriptive study was adopted purposively. Survey method was adopted in order to collect the data from the selected respondents. The selected respondents were personally interviewed and necessary information collected by using a comprehensive schedule. The schedule contained the general profile of the respondents including respondent's name, age, and gender, marital status, income, educational status and occupation etc. Body mass index of each subject was calculated from the recorded height and weight measurement [2]**.** Clinical symptoms were collected from the hospital records. Dietary survey was conducted using dietary recall method**.**

Results and Discussions

The percentage of diabetic patients in age group of 40 – 50 years were 50% followed by 30 – 40 years (35%) and 50 – 60 years (15%). The percentage of females suffering from diabetes (65%) was higher than males (35%). The no. of diabetic patients belonging to joint family (51.67%) was more than nuclear family (48.33%). The percentage of diabetic patients were in income group of less than 10,000 per month (45%) followed by income between 10,000 – 20,000 per month (31.67%) and greater than 20,000 per month (23.33%). The higher percentage of diabetic patients followed the meal pattern of breakfast, lunch and dinner (58.33%). In terms of BMI most of the diabetic patients were overweight (41.67%). In terms of personal habits cigarette smoking was more prevalent in diabetic patients (23.33%).

Variables		Percentage (%)
Age Group (years)	30 – 40	35
	40 – 50	50
	50 - 60	15
Sex	Males	35
	Females	65
Types of family	Joint family	51.67
	Nuclear family	48.33
No. of family members	2 -4	25
	5-8	33.33
	Above 9	41.66
Income (Rs/month)	< 10,000	45
	10,000 – 20,000	31.67
	> 20,000	23.33
Meal Pattern	Breakfast + Lunch + Dinner	58.33
	Breakfast + Midday + Lunch + Tea time + Dinner	16.67
	Breakfast + Lunch + Tea time + Dinner	20
BMI (kg/m^2)	Underweight (16-18.5)	8.33
	Normal (18.6-25)	25
	Overweight	41.67
	Obese Class I (Moderately obese)	5
	Obese Class II (Severely obese)	3.33
Personal Habits	Alcohol	18.33
	Alcohol + Tobacco	3.33
	Alcohol + Cigarette	11.66
	Cigarette	23.33
	Pan Masala	10
	Betel + Nuts leaves	16.67
	No habits	16.67

Table 1: General profile of the diabetic patients of Allahabad.

Symptoms	Males (n=38)	Females (n=22)	Percentage
Polyuria	26	16	70
Polyphagia	6	26	53.33
Polydypsia	26	16	70
Headache	2	-	3.33
Weakness	8	2	16.66
Fever	1	-	1.66
Weight loss	5	4	15
Giddiness	3	2	8.33
Vomiting	-	1	1.66
Diarrhea	-	-	1.66
Urinary problem	1	1	1.66
Blurred vision	-	1	1.66

Table 2: Symptoms experienced before the diagnosis of diabetes.

Before the diagnosis of diabetes mellitus, subjects experienced different symptoms. Equal percentage (70%) of subjects experienced polyuria and polyphagia followed by polydypsia (53.33%), weakness (16.66%), giddiness (8.33%), few of them (15%) had weight loss, equal percentage (1.66%) had fever, uninary problem, diarrohea vomiting and blurred vision (Table 3).

Months	Percentage of respondents	
	Male	Female
August	35 %	25%
September	30 %	40%
October	35 %	45%

Table 3: Prevalence of diabetic respondents (in the year 2018).

The above table indicates that the prevalence of respondents were more in females than males, especially in the month of October (Table 4).

Blood glucose (mg/dl)	Range	Males	Female	N=60	%
FBG					
Good control	<130	12	8	20	33.33
Poor control	>130	26	14	40	66.66
PPBG					
Good control	<180	8	6	14	23.33
Poor control	>180	30	16	46	76.66

Table 4: Classification of diabetics patients based on biochemical parameters.

The classification of diabetics based on biochemical parameters are furnished in the above table. Blood glucose is considered under two subheadings *viz.,* fasting blood glucose (FBG) and post prandial blood glucose (PPBG), 33.33 and 63.33 percent had good and poor control respectively, with reference to FBG whereas, 23.33 and 76.66 per cent had good and poor control respectively with reference to PPBG.50 per cent of diabetics had average metabolic control followed by poor control (43.33%) and only 6.66 per cent had good control. The diabetic patients who had good metabolic control and average metabolic control had better nutritional status when compared to poor metabolic control (Table 5).

Particulars	Energy(kcal)	Protein(g)	Fat(g)	Ca(mg)	Fiber(g)	Na(mg)	K(mg)
Average nutrient intake of males	2095	45	28.3	490	12	250	1293
RDA	2425	60	20	400	30	300	1875
Difference	- 330	- 15	+ 8.3	+ 90	- 18	- 50	- 582
Average nutrient intake of females	1730	42	50	496	8	310	1366
RDA	1875	50	20	400	30	300	1875
Difference	- 145	- 8	+ 30	+ 96	- 22	+ 10	- 509

Table 5: Average nutrient intake per day of diabetic patients.

The average intake of energy, protein, fiber, sodium and potassium was less than the recommended dietary allowances in males whereas the average intake of fat and calcium was more than RDA. In case of females the average intake of energy, protein, fiber and potassium was less than the RDA whereas the average intake of fat, calcium and sodium was more than the RDA [3-9].

Conclusion

Incidence of diabetes is more among 40-50 age group people. Middle-aged females are more prone to diabetes than the male. High intakes of simple sugar and living a sedentary life style, family history are probably same of the major risk factors for prevalence of diabetes. It can also be concluded that incidence of diabetes is a common disorder of civilization amongst middle age group, especially from 45-55 years and is much higher in urban areas.

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Volume 3 Issue 5 May 2019