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Consumption Practices of Non-Food Products and its Role in Incidence of Diabetes Mellitus and Related Health Status

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Abstract Diabetes mellitus is a metabolic disorder with a chronic state of hyperglycemia due to decreased production or action of insulin or of abnormal insulin. WHO reports that diabetes prevalence rate in India is 1.8% with an incidence rate of 150 per 100,000 per year. The present study was carried out on 100 randomly selected employees voluntarily attending to UAS clinic in the age group of 30-60 years. Higher the education level lesser was the incidence of diabetes which could be due to better awareness and access to knowledge to control and adopt preventive measures. Study confirms that 30% of employees were diabetic as confirmed by the higher random blood sugar level. Study revealed that higher body weight was due to higher body fat percent among diabetics. Significant positive relationship existed for smoking , alcohol and tobacco intake among diabetics. Both the categories are important productive age that contributes to nation intellectual and economic growth. This makes it imperative for an institution to extend possible welfare activity such as health screening; identifying risks; monitoring and timely counseling to maintain efficiency.

Keywords Diabetes mellitus, Blood sugar level, Non-food items, Frequency of consumption.

Introduction

Diabetes mellitus can be caused due to one more factors such as heredity, obesity, faulty food habits and lack of exercise. As per the WHO classification there are two types of diabetes, insulin dependent Diabetes mellitus (IDDM) and non-insulin dependent Diabetes mellitus (NIDDM) [1]. Non-insulin dependent diabetes is the commonest form diabetes accounting for at least 80% of cases in developed countries. Nutritional index (NI) was calculated using weight and height, of these 26% of women were found to have poor nutritional status. The workers with lower body weight might have experienced an inadequate food intake in early childhood [2]. The smoking was positively associated with meat consumption and negatively with cereal consumption in males [3]. The carbohydrate content of foods did not correspond with the subsequent blood sugar responses [4].The hypertension was the common complication present in both the type of diabetics [5]. The results showed that all the non-insulin dependent subjects at diagnosis had higher post prandial glucose level. In this study we envisaged on consumption practices of non-food products over the incidence of diabetes mellitus.

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Table 1. Percentage distribution of employees according to random blood sugar.

Random blood sugar level (mg/dl)	Diabetic		Non-diabetic	
	N	%	N	%
< 80 (low)	0	0	8	11
80-120 (normal)	0	0	62	89
>120 (above normal)	30	100	0	0

Materials and Methods

The study was conducted at University Hospital, University of Agricultural Sciences, GKVK, Bangalore, during the period 2004-2005. Subjects were selected from the University based on the age (30-60 years) and their willingness to participate as subjects throughout the period of study thus, one hundred subjects were covered under the study. A detailed schedule was formulated to elicit information on various aspects like general information of respondents, diet survey, bio-chemical status and consumption of non-food items. Dietary intake of the respondents was recorded by 24 hours recall method. Blood glucose was estimated with the help of glucometer. The mean, standard deviation, *T* test and correlation coefficient statistical tests were used to analyze the data.

Results and Discussion

The subjects were also divided according to their random blood sugar level into normal (80-120 mg/dl) hypoglycemia (<80 mg/dl) and hyperglycemia (120 mg/dl). The study indicates that 100% of the employees belongs hyperglycemia in diabetic group, whereas in non-diabetic group 89% of the employees belong to normal, and remaining 11% of the employees belong to hypoglycemia (Table 1).

From the study it is revealed that 40%of subjects were found to smoke daily, 16% of subjects smokes occasionally and remaining 44% of subjects never smoke in diabetic case, whereas, in non diabetic case 30% were found to be smoking daily, 14% occasionally and 56% never smoke. Also among diabetic respondents 87% were found to consume alcohol. In non diabetic respondents 64% were found to consume alcohol. Among diabetic respondents 84% of the respondents consumed tobacco and 16% never used tobacco. In non-diabetic group 61% using tobacco and 39% of the respondents were not using tobacco. Finally among the diabetic respondents 60% were found to use betel nut and 40% were not using betel nut. In non-diabetic subjects 64% were found to use betel nut and 36% of respondents never use betel nut (Table 2).

Table 2. Frequency of consumption of non food items.

	Respondents			
	Diabetic		Non diabetic	
Smoking	N	%	N	%
Daily	12	40	21	30
Occasionally	5	16	10	14
Never	13	44	39	56
Total	30	100	70	100
Alcohol	N	%	N	%
Daily	15	50	20	28
Weekly	6	20	10	15
Occasionlly	5	17	15	21
Never	4	13	25	36
Total	30	100	70	100
Tobacco	N	%	N	%
Daily	10	34	15	21
Weekly	3	10	10	14
Fortnight	5	16	4	6
Occasionally	7	24	14	20
Never	5	16	27	39
Total	30	100	70	100
Betel nut	N	%	N	%
Daily	5	17	15	22
Weekly	3	10	10	14
Occasionally	10	33	20	28
Never	12	40	25	36
Total	30	100	70	100

The correlation coefficients were estimated to know the relationship between blood sugar level with non-food habits such as alcohol consumption, to-

Table 3. Correlation between random blood sugar with non-food items. NS : Non-significant, *Significant at 5% level.

Non-food habits	Diabetic	Non-diabetic
Smoking	0.68*	0.232NS
Alcohol	0.46*	0.169NS
Tobacco chewing	0.53*	0.209NS
Betel nut	0.08NS	0.065NS

Table 4. Clinical symptoms observed among respondents.

Deficiency symptoms	Respondents			
	Diabetic		Non-diabetic	
	N	%	N	%
Anemia	-	-	2	3
Dental caries	5	17	9	13
Discolored hairs	4	13	5	7
Gums spongy bleeding	3	10	7	10
Normal	18	60	47	67
Total	30	100	70	100

bacco chewing, smoking and betel nut chewing. The results showed that there is strong significant positive relationship between smoking, alcohol consumption and tobacco chewing with blood sugar level among the diabetic subjects, whereas, none of the non-food habits found to be significant with blood sugar level in non diabetic subjects (Table 3).

Prevalence of nutrient deficiency symptoms of the subjects was also recorded and showed that among the diabetic subjects (17%) had dental caries followed by discolored hairs (13%) and gums spongy bleeding (10%), 60% of the respondents were in normal conditions. Whereas in non diabetic respondents (13%) had dental caries, (10%) gums spongy bleeding, (7%) discolored hairs (Table 4)

Conclusion

Study confirms that 30% of the employees who volunteered to be subjects of the study were diabetic as confirmed by higher random blood sugar level. Significant positive relationship existed for smoking, alcohol and tobacco intake among diabetics. This makes it imperative for an institution to extend possible welfare activity such as health screening, identifying risks; monitoring and timely counseling to maintain efficiency.

References

1. WHO (2002) Globalization diets and non-communicable diseases. WHO, Switzerland.
2. Satyanarayana K, Naidu AN, Chatterjee B, Rao BSN (1977) Body size and work output. Am J Clin Nutr 30 : 322—325.
3. Morabia F, Hinder F (1990) dietary habits of smokers, people who never smoked and ex-smokers. Am J Clin. Nutr. 52 : 923—937.
4. Chitra KV, Thilakabaskaran (1989) Glycemic response of diabetics to selected cereals administered in different forms. Ind J Nutr Dieter 26 : 122—125.
5. Pallavi M, Kalindi N, Sandhya P, Sushma B, Neha P (1989) Effects of dietary counseling on knowledge gain of middle and high income group diabetics. Ind J Nutr Dietet 26 : 260—264.

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