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RESEARCH ARTICLE

KNOWLEDGE ATTITUDE AND PRACTICE REGARDING DIABETES MELLITUS AMONG THE BANK EMPLOYEES IN BELAGAVI CITY, INDIA: A CROSS SECTIONAL STUDY

Abdirahman Ibrahim Hassan¹, Dr. Ashwini B. Narasannavar², Dr. Mubashir Angolkar³

MPH, Department of Public Health, J.N. Medical College, KLE University, Belagavi, Karnataka, India.
 Assistant Professor, Department of Public Health, J.N. Medical College, KLE University, Belagavi, Karnataka, India.

3. Associate Professor and Head, Department of Public Health, J.N. Medical College, KLE University, Belagavi, Karnataka, India.

Manuscript Info	Abstract
Manuscript History:	Background: Diabetes mellitus is a metabolic abnormality characterized by
Received: 14 June 2015 Final Accepted: 26 July 2015 Published Online: August 2015	hyperglycemia. Most often it tends to be asymptomatic and is a silent killer disease. The prevalence of diabetes is rapidly rising all over the world in the last 30 years. The World Health Organization has predicted that there will be 42% increase (51 to 72 million) in the developed countries and 170%
Key words:	increase (84 to 228 million) in the developing countries.
Knowledge, Diabetes Mellitus, Bank employees	mellitus among the employees of selected nationalized Banks in Belagavi City.
*Corresponding Author	Materials and Methods: A cross sectional study was conducted from January 2014 – February 2015 among selected nationalized Bank employees
Abdirahman Ibrahim Hassan	in Belagavi city. Structured pre- tested questionnaire was used to collect information on different variables per training to the study. Results: A total of 385 of Bank employees were interviewed out of which 31.3% of males belonged to 20 to 29 years age group. Majority 252 (65.5%) of the participants were males and 88.8% of the Bank employees were Hindus religion, 75.6% of the participants had no family history of diabetes mellitus. 69.6% had heard about diabetes mellitus from different source. 53% visited physician regularly and 23.6% had their blood checked regularly. Conclusion: The study highlights knowledge regarding diabetes mellitus and it was reported that the participants had good knowledge about self care diabetes mellitus.
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INTRODUCTION

Diabetes mellitus is a metabolic abnormality characterized by hyperglycemia and disturbances of carbohydrate, fat and protein metabolism that are associated with absolute or relative deficiency in insulin secretion and fasting hyperglycemia but it can also be characterized in the less overt stages and before fasting hyperglycemia appears, most usually by the appearance of glucose intolerance and tends to be asymptomatic 'silent killer; in which case the diagnosis depends on biochemical investigation.^{1,2}

Diabetics is the important risk factors for other disease like hypertension, cardiovascular disease, skin disease, gangrene and other serious complications like retinopathy, neuropathy, nephropathy and lower extremity amputations are common among the diabetes patient.^{3,4} All though diabetes is an incurable disease, it can be managed very well and the prevalence of diabetes is rapidly rising all over the world In the last 30 years, the status of diabetes has changed from being considered as a mild disorder of the elderly to one of the major cause of morbidity and mortality affecting the youth, middle age and old age people.⁵

World Health Organization estimated the total number of diabetes in the year 2000 as 31.7 million, majorities living in urban areas. Over 98% are believed to have Type-2 diabetes and number likely to increase is 79.4 million by the 2030⁶. The reason for high prevalence of diabetes mellitus in India is due to a combination of genetic factor to "Asian Indian phenotype". Environmental factors, "urbanization and industrialization" had lead sedentary life style, stress and obesity.⁷ However, this will not occur unless the government and public health planners are aware of the potential problem ^{3, 7}. There are very few studies conducted among Bank employees regarding diabetes mellitus. Bank employees are constantly exposed to stress due to long hours of work, sitting in front of computers, dealing with money which needs strongly management and systematic to demonstrate the cash and full concentration. Hence, the present study was conducted among Bank employees.^{8,9}

Materials and Methods

This cross sectional study was conducted among 385 Bank employees from selected nationalized banks in Belagavi city for a period from January 2014 to February 2015. An ethical clearance was taken from the Institutional Ethical Committee of J N Medical College, KLE University. A well structured, pre tested questionnaires consisting of items describing the demographic variables of the sample like age, sex, marital status, personal qualification, religion, type of family, family history of diabetes, personal habits (tobacco chewing, smoking and alcohol,) was taken. Sample size was calculated as per the formula, $4pq/d^2$ (p=50%, q=100-p, d=5) taking 50% knowledge, hence the sample size was 385. The participants were recruited by simple random sampling method. The data analysis was done by using SPSS version 20 and summarized with the descriptive statistics like mean, median and standard deviation. Inferential statistics like χ^2 test was used for testing the hypothesis.

Results

385 Bank employees were recruited in the study of which 252 were males and 133 were females. 79 (31.3%) of males belonged to 20 to 29 years of age group, Similarly 64 (25.4%), 63(25.0%) and 46 (18.3%) male Bank employees were from the age group of 30 to 39 years, above 50 years and 40 to 49 years respectively. Out of 133 females 48 (46.1%), 35 (26.3%),30 (22.6%) and 20 (15%) belonged to the age group of 20 to 29 years, above 50 years, 30 to 39 years and 40 to 49 years respectively (**Figure.1**). 260 (67.5%) of the participants were married, 108 (28.1%) unmarried, 8 (2.1%) widow and 9 (2.3) were divorced. 228 (59.2%) Bank employees had completed their graduation, 103 (26.8%) did post graduation. Whereas 27 (7.0%) of them had completed PUC/diploma level, 15 (3.9%) did secondary level education and 12 (3.1%) primary level education. Majority of the participants were from nuclear family 64.2%, whereas 115 (29.8%) of the participants from joint family, and 23 (6%) were from extended family. 342 (88.8%) of the Bank employees were from Hindus religion, 22 (5.7%) belonged to Muslim religion, 15 (3.9%) were of Christian religion and also 6 (1.6%) were from other religion (**Table 1**).

Figure.1: Distribution of the participants according to age and sex.



TABLE 1. Demographics Characteristics of the Bank Employees

Variable	Frequency	Percentage %						
Marital Status of the participants								
Married	260	67.5						
Unmarried	108	28.1						
Window	8	2.1						
Divorced	9	2.3						
Education status of the participants								
Primary School	12	3.1						
Secondary School	15	3.9						
PUC/Diploma	27	7.0						
Graduate	228	59.2						
Postgraduate	103	26.8						
Total	385	100						
Type of the family of the participants	Type of the family of the participants							
Nuclear	247	64.2						
Joint	115	29.8						
Extended	23	6						
Religion wise distribution of the participants								
Hindu	342	88.8						
Muslim	22	5.7						
Christian	15	3.9						
Others	6	1.6						

More than half of participants 269 (69.6%) had heard about diabetes mellitus, where as 116 (30.4%) did not hear. 291(75.6%) had no family history of diabetes mellitus, where as 94 (24.4%) had family history. Among the family members 28 (7.3%) said father had the history of diabetes, followed by 20 (5.2%) mothers. 9 (2.3%) said that husband had the history of diabetes. 32 participants were tobacco consumers and 23 alcohol users.

There was statistical significance found between age and knowledge of the Bank employee, 61.4% of age 20 to 29 had poor knowledge, 17.3% and 21.3% had average and good knowledge respectively. Similarly 52.1%, 26.6% and 21.3% of participants of 30 - 39 years had poor, average and good knowledge respectively Out of 66 participants of age 40-49 years 60.6%, 15.2% and 24.2% had poor average and good knowledge respectively. Similarly 38 (38.8 %), 28 (28.6\%) and 32 (32.7\%) of participants of age of above 50 year had poor, average and

good knowledge respectively (**Table2**). Similarly, statistical significance was found by association of knowledge with family who had family history of diabetes mellitus where 44.4% had good knowledge as compared to 18.8% who did not have family history. 183 (62.7%) participants from those without family history of diabetes had poor knowledge and 23.7% had poor knowledge among participants with family history (**Table3**). 38.7% had negative attitude as compared to 38 (13%) who did not have family history. 138 (47.3%) participants from those without family history of diabetes had negative attitude and 6.5% had negative attitude among participants with family history (**Table4**).

	Knowle	Knowledge Score								
Age	Poor		Averag	Average		Good		TOTAL		
8-	No	%	No	%	No	%	No	%		
20-29	78	61.4	22	17.3	27	21.3	127	100		
30-39	49	52.1	25	26.6	20	21.3	94	100		
40-49	40	60.6	10	15.2	16	24.2	66	100		
Above 50	38	38.8	28	28.6	32	32.7	98	100		
$\chi^2 = 15.189$, p=0.0196										

TABLE 2: Association between Age & Knowledge of Bank Employees

TABLE 3: Association of knowledge with family history

Family diabetic	Knowledge								
	liabetic	Poor		Average		Good	TOTAL		
instory		No	%	No	%	No	%	No	%
Yes		22	23.7	30	32.3	41	44.4	93	100
No		183	62.7	55	18.8	54	18.8	292	100
Total		205	86.4	85	51.1	95	81.2	385	100
$\chi^2 = 44.64 \text{ p} < 0.001294$									

TABLE 4: Association of attitude of participants with family history

	Attitude Grading Score							
Family history	Poor		Average		Good		TOTAL	
Family mistory	No	%	No	%	No	%	No	%
Yes	6	6.5	51	54.8	36	38.7	93	100
No	138	47.3	116	39.7	38	13	292	100
Total	144	100	167	100	74	100	385	100
χ2=59.350 p<0.001								

Discussion

Very few studies have been conducted among Bank employees and hence some variables have been discussed from general population studies. In the present study, 33% of study participants were in the age group of 20-29 years followed by above 50 years, 30 to 39 and 40 to 49 years (25%, 24.4% both male and females 17.1% respectively). Similar study was done among Bank employees of Meerut district Uttar Pradesh state which showed that 31% of participants were less than 45 years of age.¹⁰ A study done in Tamil Nadu showed that, 49% of study participants were of 20 - 34 age group followed by 27% in 35-49 years and 24% in >50 years and 60% the participants were females.¹¹ In another study conducted in Bangladesh among general population, it revealed that 39% participants were in the age group of 25-40 years followed by 36% in 41-55 years age & 25% in >55 years¹². Similar study done in Riyadh's Egypt among school teachers (who are educated like Bank employees and having

sedentary life style) showed that males 65.5% and 34.5% were females respectively¹³. In our study 56.7% were < 40 years. This may be due to time as many young age employees have been appointed and also more nationalized banks in the study are of the Bank Employees. Other study among Bahraini school teachers showed that, female teachers made up 60% of the sample and about 78% of them were married.¹⁴ In our study most of the participants 88.8% belonged to Hindu religion, Similar to our study, Meerut and Tamil Nadu study done showed that, majority 91.5% (n=183) were Hindus.¹⁰

In our present study, 222 (57.7%) participants believed that diabetic mellitus is caused by excessive intake of sweets, fats 180 (46.8%) and carbohydrates 156 (40.5%) respectively. 182 (48.6%) of them gave correct answer about signs and symptoms of diabetes mellitus that person with diabetes feels hungry. Another study done among Bahraini school teachers showed that, majority 88.90% of teachers had knowledge regarding person with diabetes would pass more urine, 2.60% of teachers knew that diabetics would feel more thirsty.¹⁴ In our study, 134 (34.8%) said it affects kidney, eye, heart and nervous system. Surprisingly, 232 (60.3%) did not know that kidney, eye, heart and nervous system were affected by diabetes mellitus. 131 (34%) of the participants gave correct answer for the normal blood sugar level that is 100mg/dl to 120mg/dl. 49 (12.7%) participants thought that diabetes mellitus increases life span. Nearly half of the participants did not know that diabetes is associated with any complications. Only 134 (34.8%) said yes that diabetes is associated with complications. Most of them had positive attitude and also very few practiced regular visit to physician and blood check up.

Conclusion

Majority of the participants had good knowledge about diabetes mellitus and its prevention but very few participants visited their physician regularly and got tested their fasting blood sugar. Participants those who did not have family history of diabetes mellitus had poor knowledge of diabetes mellitus. There was association seen between knowledge with education and age. Most of them had sedentary life style and also they are at stress as they deal with money matter, hence intervention focusing on behavior change has to be done. Health education on risk factors of diabetes mellitus should be done on regular basis among Bank employees.

Limitations

- Detailed information related to habits was not given by the participants
- In discussion the results are compared with studies conducted in community but not with Bank employees because there are very few studies done on diabetes mellitus among them.

Recommendation

Health education should be done on a regular basis for bank employees. More studies related to assessment of risk factors of diabetes mellitus has to be conducted.

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