

## Prevalence of Diabetes Mellitus among working personnel at Taibah College of Medicine, Medina, Saudi Arabia, 2013

Faisal Almukhlifi<sup>(1)</sup>, Khaled Alharbi<sup>(1)</sup>, Ahmad Alofi<sup>(1)</sup>, Essa Aljuhani<sup>(1)</sup>,  
Mohammed S. Alenazi<sup>(1)</sup>, Ahmad Alharbi<sup>(1)</sup>, Ahmad Alhabidi<sup>(1)</sup>, Dr.Soliman  
Amer<sup>(2)</sup>

<sup>(1)</sup> (Faculty of Medicine, Taibah University, Saudi Arabia)

<sup>(2)</sup> (Department of Family and Community Medicine, Faculty of Medicine, Taibah University, Saudi Arabia)

### ABSTRACT

#### Background

Diabetes mellitus is one of the most common endocrine diseases in all populations and all age groups. There are many risk factors that are associated with diabetes mellitus that may include obesity, sedentary Lifestyle, Unhealthy Eating Habits, Family History and genetics.

#### Objective:

To determine the prevalence of DM among working personnel of the Faculty of Medicine at Taibah University. To determine the relationship between DM and lifestyle factors.

#### Methods:

A descriptive (cross-sectional study) it was among working personnel (male), faculty of Medicine, Taibah University in Al-Medina Al-Munowrah in K.S.A. the study was conducted on 104 persons. The statistical analysis was conducted with SPSS version 19.0 for Windows. Data were collected using self-administrated questionnaire free informed consent was taken from each participants.

#### Results:

Prevalence of diabetes mellitus among the studied subjects was 21.15%. Related risk factors were smoking habit, body mass index, eating fast food, physical activity, increased age with type II DM and the high incidence of type I was in ten years. The prevalence of DM increases with smokers comparable to nonsmokers BMI eating fast food and decreases when there is an increase with physical activity.

#### Conclusion:

Diabetes is a considerable chronic disease. The related risk factors were old age. Other factors like BMI, smoking, eating fast food, and physical activity are controllable. Key words: prevalence, DM, working personal  
**Keywords:** Diabetes, Prevalence, Saudi Arabia, Taibah University, Working personnel.

## I. INTRODUCTION

Diabetes mellitus is a group of metabolic diseases in which a person has high blood sugar, either because the body does not produce enough insulin, or because cells do not respond to the insulin that is produced. This high blood sugar produces the classical symptoms of polyuria, polydipsia and polyphagia .The prevalence of diabetes in Saudi Arabia is about 23.7% and the number of diabetes patients all over the world are approximately 195 million at this time [1].

Diabetes Mellitus has two types Type 1: In type 1 diabetes (formerly called insulin-dependent diabetes or juvenile-onset diabetes); more than 90% of the insulin-producing cells of the pancreas are permanently destroyed. The pancreas, therefore, produces little or no insulin. Only about 10% of all people with

diabetes have type 1 disease. Most people who have type 1 diabetes develop the disease before age 30 [2]. In type 2 diabetes (formerly called non-insulin-dependent diabetes or adult-onset diabetes), the pancreas continues to produce insulin, sometimes even at higher-than-normal levels. However, the body develops resistance to the effects of insulin, so there is not enough insulin to meet the body's needs [2].

Diabetes is a serious disease that may cause ketoacidosis, hyperglycemia hyperosmolar state, diabetic coma and Respiratory infections, elevation of blood glucose level leads to damage of blood vessels (angiopathy). The damage to small blood vessels leads to a microangiopathy, which can cause one or more of the following cardiomyopathy, diabetic nephropathy and diabetic retinopathy Peripheral Nerve Degeneration numbness, tingling, impotence [3].

There are many risk factors that are associated with diabetes mellitus which may include obesity ,sedentary Lifestyle ,Unhealthy Eating Habits ,Family History and genetics, increased Age ,high Blood Pressure and High Cholesterol [4]. Regarding to the high number of diabetic patients in the middle east, we try to identify prevalence of DM among studied subjects and there is no research done here about DM in Taibah University[5].

## **II. SUBJECTS AND METHODS**

A descriptive (cross-sectional study) to know prevalence of diabetes mellitus among working personnel ,faculty of Medicine ,Taibah university and if there are risk factors or not. The study was among working personnel (male), faculty of Medicine, Taibah University in Al-Medina Al-munowrah in K.S.A. It was conducted on 104 persons: 50 doctors, 6 workers and 48 employees (out of 110 persons).

Data was collected by self-administrated questionnaires; in which two questionnaires were designed one of them was in Arabic for employees and the other English for doctors. Persons were asked questions to provide information on diabetes according to the questionnaire and medical history of diabetes; Self-reported diabetes was coded as "Yes" if the participants had diabetes.The questionnaire was 24 questions seven questions were socioeconomic data and the remaining 17 questions were`1 study data. This study differentiates between type 1 and type 2 diabetes, as the case definition for diabetes used in the questionnaires has sub-classifications that would allow differentiation between type 1 and type 2 diabetes. Continuous variables were described (age – obesity- smoking –physical activity).

## **III. STATISTICAL ANALYSIS**

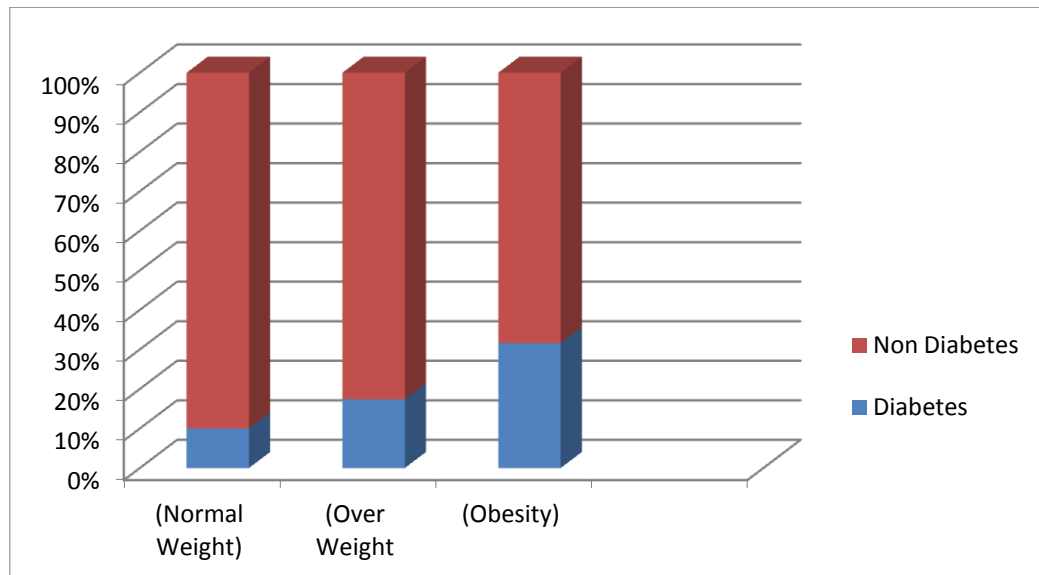
The statistical analysis was conducted with SPSS version 19.0 for Windows. Descriptive and analytical statistics were performed. P value was considered significant at level  $< 0.05$ .

#### IV. RESULTS

**Table (1).** Prevalence of DM among the studied subjects.

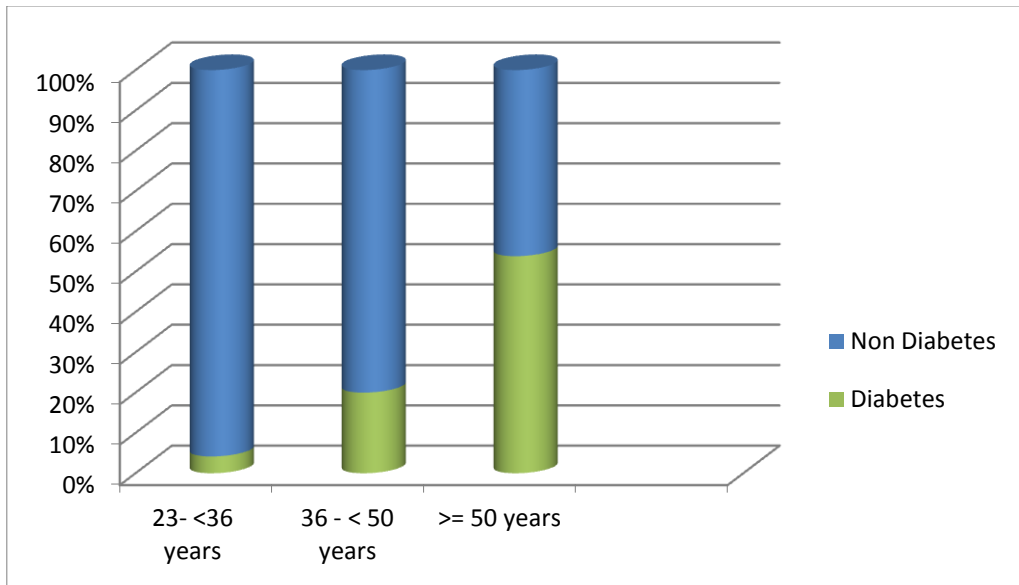
		Diabetes Mellitus				Total
		Yes		No		
	Doctors	16	32%	34	68%	50
	Employee s	4	8.33%	44	91.67%	48
	Workers	2	33.33%	4	66.67%	6
Total		22	21.15%	82	78.85%	104

A total of 104 persons in the faculty of medicine at Taibah University were included in this study at table (1). The prevalence of diabetes mellitus was 21.15%: 16 doctors (32%) and 2 person (33.33%) worker and 4 employees (8.33%) in which the prevalence of diabetes mellitus in KSA is about 23.7%.



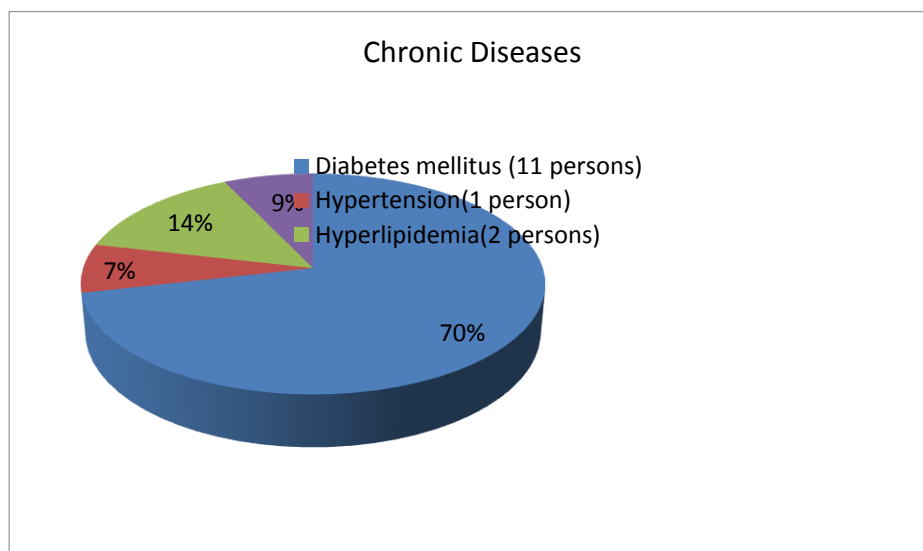
**Figure (1).** Prevalence of DM regarding to obesity among studied subjects.

Comparing the prevalence of diabetes according to BMI showed that normal weight were 40 persons, 18 of them (90%) had no diabetes while one of them (10%) had diabetes. Overweight people were 52 persons 8 of them had diabetes (17.39%) and 76 had no diabetes. The prevalence was the highest when compared with obese persons they were 24 persons (31.58%) (Out of 76 obese persons).



**Figure (2).** Prevalence of DM regarding to age among studied subjects.

When we take the prevalence of DM among the age of the persons, we observe that persons between 46 and less than 36 years was two person (4.17%) out of (96 persons).When we take the prevalence of DM that exceed 36 years were 60 persons 12 of them complaint from DM(20%) while others non . when the persons increase in the age ,the prevalence of DM also increase persons more than 50 years were 15 seven (46.67%) persons had diabetes.



Prevalence of chronic diseases among working personnel, Faculty of Medicine, Taibah University.  
 (DM has the highest percentage of the chronic diseases in the working personnel, Faculty of Medicine, Taibah University)

**Table (2).** relationship between DM and lifestyle factors.

Variables	Diabetes Mellitus				Total
	Yes		No		
Persons whose eat fast food	18	31.03%	40	68.97%	58
Person do not eat fast food	4	8.70	42	91.30	46
Persons do exercise	2	6.25%	32	94.12%	34
Persons do not do exercise	20	28.57%	50	71.43%	70
Persons whose smoke	14	36.83%	24	63.16%	38
Persons whose doesn't smoke	2	3.13%	62	96.88%	64
Ex-smoker persons	2	100%	0	0%	2

We observe that prevalence of DM increases with eating fast food 31.03% comparable to non-eating fast food 8.70%. Also the prevalence of DM decreases with doing exercise 6.25% comparable to no exercise 28.57%.

## V. DISCUSSION

Diabetes is multifactorial disease of considerable heterogeneity. Prevalence of diabetes worldwide will see an increase of 42% between the years 2003 and 2025[6] Diabetes mellitus has the highest percentage of the chronic diseases among working personnel in the Faculty of Medicine at Taibah University .It agrees with study was done in King Fahd Armed Forces Hospital [7]. We also found several factors, which are significantly Associated with an increased risk of DM. These factors include: increases age type II DM and peak incidence of type I DM was among 10 years, BMI, smoking habit, physical activity, eating fast food [8].

Prevalence of DM increases when there is an increase in the age of the persons. It agrees with study was in King Fahd Armed Forces Hospital. This is may be because 90% of diabetes represent the type 2 diabetes which occur over 35 years people while 10% represent type 1 diabetes which occur in the childhood and puberty [9]. In addition, Prevalence of DM increases in the overweight and obese people and it agrees with that study King Fahd Armed Forces Hospital. This may be due to Insulin resistance of the obesity may causes DM [10].Diabetic smokers had the highest percentage comparable to non-smokers and ex-smokers .It agrees with that study. Smoking may causes inflammation in the pancreas and decreases the release of the insulin [11].

## **VI. Authors' contributions**

All the authors were participated in constructed, distributed and collected the questionnaires, analyzed the data and drafted the paper.

### **7.1 Conflict of interest**

The authors have no conflict of interest to declare.

### **7.2 Acknowledgements**

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