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Student Section

The prevalence of diabetes mellitus among working personnel in the faculty of science, Taibah University, Almadinah Almunawwarah, KSA

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المخلص

أهداف البحث: يحظى مرض السكري باهتمام عام كبير على مستوى العالم. ويعتبر مشكلة صحية مهمة نظرا لارتفاع المراضة والوفيات بسببه. أجريت هذه الدراسة لتحديد انتشار مرض السكري بين العاملين في كلية العلوم في جامعة طيبة ودراسة بعض العوامل التي تؤثر على المرض.

طرق البحث: أجري مسح مقطعي في كلية العلوم بجامعة طيبة. شارك في الدراسة 99 شخصا من 137 بمعدل استجابة 72.3%. جمعت البيانات عن طريق توزيع استبانات وقياس مستوى السكر العشوائي في الدم، وقياس الوزن والطول لجميع المشاركين.

النتائج: بلغ انتشار مرض السكري بين العاملين في كلية العلوم بجامعة طيبة 14.1%. جميع المصابين بمرض السكري تجاوزت أعمارهم 30 عاما، كما أن 57.1% منهم يعيشون في المدن، ويتناول نصفهم الوجبات السريعة أكثر من 3 مرات أسبوعيا و78.6% منهم لديهم تاريخ عائلي لمرض السكري. المتغيرات ذات الدلالات الإحصائية بين المصابين بالمرض وغير المصابين كانت: العمر، ومكان الإقامة، وتناول الوجبات السريعة، والرياضة، والتاريخ العائلي أو العوامل الوراثية.

الاستنتاجات: هناك انتشار كبير لمرض السكري بين العاملين الذكور في كلية العلوم بجامعة طيبة. أظهرت دلالات إحصائية بين المصابين بمرض السكري وغير المصابين بالنسبة للعمر، ومكان الإقامة، وتناول الوجبات السريعة، والرياضة والتاريخ العائلي أو العوامل الوراثية.

الكلمات المفتاحية: مرض السكري; الطاقم الطبي; المملكة العربية السعودية; جامعة طيبة

Abstract

Objectives: Diabetes mellitus (DM) is a major public concern throughout the world. It is an important health problem because of its high morbidity and mortality. The study was conducted to determine the prevalence of DM among working personnel of faculty of science in Taibah University and to study some factors which may affect the disease.

Methods: A cross sectional study was conducted in the college of science at Taibah University. 99 out of 137 subjects participated in this study with a response rate of 72.3%. Data were collected by administering a questionnaire and measuring random blood glucose level (RBG), weight and height for all participants.

Results: The prevalence of DM among working personnel in the faculty of science at Taibah University is 14.1%. Concerning diabetics, all of them are above 30 years old,

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57.1% of them lived in urban regions, half of them eat fast-food more than 3 times a week and 78.6% had a family history of DM. Variables which showed statistically significant difference between diabetics and non diabetics were: age, residency, eating fast food, exercise and the family history or the genetic factors.

Conclusion: A considerable prevalence of DM is detected among working personnel in the male section of the faculty of science at Taibah University. Age, residency, eating fast food, exercise and the family history or the genetic factors showed statistically significant difference between diabetics and non diabetic personnel.

Keywords: Diabetes mellitus; Medical staff; Saudi arabia; Taibah University

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Introduction

Diabetes Mellitus (DM) is a group of metabolic disorders that threatens to reach pandemic levels by 2030.¹ It is characterized by chronic hyperglycemia and associated with a disturbance in carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both.² Two types are known, Insulin-dependent diabetes mellitus (IDDM) or type 1, and non-insulin-dependent diabetes mellitus (NIDDM) or type 2. Type 1 is usually due to an autoimmune attack which results in the destruction of B-cells of pancreas. It accounts for 10% of all cases. The second type or NIDDM, which is responsible for 80% or 90% of the cases, occurs when there is insulin resistance or impaired insulin secretion.³ Another type which is the Gestational DM is also identified. The most devastating complication is diabetic nephropathy, which is associated with a markedly increased risk of end-stage renal failure, retinopathy, cardiovascular disease⁴ and premature death.⁵

According to WHO, Diabetes mellitus is affecting an estimated 5% to 10% of the adult population of the whole world.⁶⁻⁸ The International Diabetes Federation (IDF) says that the number of people living with diabetes is expected to rise from 366 million in 2011 to 552 million by 2030.⁹ Six out of the world's top ten countries for highest prevalence (%) of diabetes are in the Middle East and North Africa Region including Saudi Arabia, Kuwait, Lebanon, Qatar, Bahrain and the United Arab Emirates. The region has the highest comparative prevalence of diabetes 11%.⁹ In Saudi Arabia, several studies have been conducted to determine the prevalence of DM. One of them, published in 2004, estimates 23.7% of the Saudi population are suffering from the disease.⁷ A lot of factors has caused an increased percentage of getting the disease such as urbanization, and unhealthy lifestyles (decreased physical activity, increased obesity and smoking).^{10,11}

As medical students, we conduct this research as a project for Medical Research Course and to get the basics and experience of writing a good scientific research. In addition, and after reviewing the 5 volumes of Journal of Taibah University Medical Sciences, none of them discussed the prevalence of DM at

the level of the university or Al Madina Al Monawara which may make this study helpful.

Objectives

1. To determine the prevalence of DM among working personnel of faculty of science in Taibah University.
2. To study the relationship between DM and some factors like age, residency, occupation, eating habits, exercise, working hours, genetic factors, hypertension, smoking, and obesity.

Materials and Methods

Type of the study

A cross sectional descriptive study.

Study population

Working personnel in the male section of the faculty of science in Taibah University.

Data collection

Out of 137, (divided as 106 Academia, 24 Employees, 7 Workers), 99 subjects participated in this study (divided as 68 Academia, 24 Employees, 7 Workers). The employees and workers showed a 100% response rate, while academia showed only 64.2%. The whole response rate is 72.3%. We conducted this study using a self administered questionnaire and we measured the Random Blood Glucose (RBG) level for all participants. Two blood sugar-testing devices from the same brand are used (Brand: ACCU -CHEK Active). This was conducted from 19 to 23 of November 2011, which took a whole week.

Data analysis

SPSS program was used to calculate the prevalence and P values of the study variables (0.05 is used as the alpha level). Range values used in this study for measurement of RBG are based on the American Diabetes Association (ADA) guidelines. Participants who showed a RBG level below 140 mg/dl are considered to be normal while those with a RBG level equal to or more than 200 mg/dl are considered to be diabetics.

(In this study, prediabetics (those with a RBG level between 140 mg/dl and 199 mg/dl), who showed 7.1% (7 persons), are considered to be within the normal group because they need more tests such as fasting plasma glucose test (FPG) and A1C test to insure their diabetic status and also to make data analysis much easier.)

- Range values used in this study for Body Mass Index (BMI) are dependent on WHO criterion. Participants are considered to be underweight if their BMI measurements are less than 18.5, normal if the range is between 18.5 and 24.99, overweight if they lie between 25 and 29.99, obese if their BMI measurements are equal to or more than 30.

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