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AWARENESS ON THE RISK FACTORS OF DIABETES AMONG HOMEMAKERS IN SAUDI ARABIA.

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Abstract

The Study encompasses awareness of the risk factors of diabetes among homemakers done in some countries, it was found that 33% of the homemakers were diabetic[9]. About 50% of diabetes cases remain undiagnosed, a fact that suggests low knowledge about diabetes [3-4]. The main objective of the present study is to assess the awareness level of homemakers in Saudi Arabia about the risk factors of diabetes. Under the following directive objectives

a. To identify knowledge of the risk factors associated with diabetes prevalence and awareness.

b. To assess routine lifestyles aimed at prevention of diabetes among the homemakers.

c. To identify the association of sociodemographic, health, and lifestyle factors with the awareness and prevalence of diabetes.

Method: *A cross-sectional study among homemakers across different regions in Saudi Arabia towards awareness of the risk factors of diabetes. Data were collected using self-administered questionnaires, where sample respondents participated in the study on their own will*

Results: *The present study enrolled 195 female and 174 male respondents, where the proportions did not significantly vary at 5% level p=.275. The number of respondents that said they had been checked their blood sugar levels recently was 173(46.9). The average sample age was M=33.72 years with a deviation from this sample mean of 13.471 years. Diabetes condition was significantly associated with gender, marital status, exercise condition and habit of taking naps p<.05 in all mentioned cases. Diabetes condition significantly differed with age p<.01*

Conclusion: *While the proportion of individuals who recently checked their blood sugar levels was almost half of the sample, attitudes as measured in regular health check-ups and, regular physical exercise indicate low numbers, which calls for much more effort to increase attitude and lifestyle alterations that deter diabetes.*

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INTRODUCTION:

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin. There are two types of Diabetes, Type 1 diabetes which is characterized by the body's inability to produce insulin due to the autoimmune destruction of the beta cells in the pancreas. Although, onset frequently occurs in childhood, the disease can also develop in adults [1]. Type 2 diabetes mellitus is characterized by hyperglycaemia and resulting from the combination of resistance to insulin action, inadequate insulin secretion, and excessive or inappropriate glucagon secretion [2]. According to the WHO global report, 422 million adults have diabetes. The statistics have quadrupled from 1980 and have led to this dramatic increase. Approximately 1.6 million deaths are connected to diabetes. There is one major concern that is still problematic; the facts that some people are unaware of their medical condition. About 50% of the people still remain undiagnosed which is a drawback [3-4]. Symptoms of diabetes include, increased thirst and urination, increased hunger, fatigue, blurred vision, numbness or tingling in the feet or hands, sores that do not heal, and unexplained weight loss. Causes of Type 1 Diabetes occurs when the body's immune system, attacks and destroys the insulin-producing beta cells of the pancreas. Scientists think that type 1 diabetes is genetically linked in addition to environmental factors, such as viruses, that might trigger the disease. Type 2 Diabetes, the most common type of diabetes, is caused by several factors, including lifestyle factors, genes, overweight, obesity, and physical inactivity [5]. There are serious complications of diabetes that include, foot complications, DKA (Ketoacidosis) & ketones, kidney disease (nephropathy), high blood pressure, stroke, and gastroparesis [6].

Diabetes is diagnosed by different tests, fasting plasma glucose test measures the blood glucose after you have gone at least 8 hours without eating. This test is used to detect diabetes or prediabetes. An oral glucose tolerance test measures your blood sugar after you have gone at least eight hours without eating and two hours after you drink a glucose-containing beverage. The test can be used to diagnose diabetes or prediabetes. In a random plasma glucose test, your doctor checks your blood sugar without regard to when you ate your last meal. This test, along with an assessment of symptoms, is used to diagnose diabetes, but not prediabetes [7]. Treatment of patients with type 2 diabetes mellitus includes education, evaluation for micro- and macrovascular complications, attempts to achieve near normoglycemia, minimization of cardiovascular and other long-term risk factors, and avoidance of drugs that can exacerbate abnormalities of insulin or lipid metabolism. All of these treatments need to be tempered based on individual factors, such as age, life expectancy, and comorbidities. Although studies of bariatric surgery and aggressive insulin therapy have noted remissions of type 2 diabetes mellitus that may last several years, the large majority of patients require continuous treatment in order to maintain target glycaemia. Treatments to achieve reductions in hyperglycaemias focus on increasing insulin availability (either through direct insulin administration or through agents that promote insulin secretion), improving sensitivity to insulin, delaying the delivery and absorption of carbohydrate from the gastrointestinal tract, increasing urinary glucose excretion, or a combination of these approaches [8]. Studies about awareness on the risk factors of diabetes among homemakers done in some countries, it was found that 33% of the homemakers were diabetic. This shows that they are aware of their health conditions and possibly taking precautions by following a healthy and altered lifestyle [9]. The goal of the present study is to assess the awareness on the risk factors of diabetes among homemakers in Saudi Arabia.

Objectives

The main objective of the present study is to assess awareness level of homemakers in Saudi Arabia about the risk factors of diabetes. Under the following directive objectives

a. To identify knowledge of the risk factors associated with diabetes prevalence and awareness.
b. To assess routine lifestyles aimed at prevention of diabetes among the homemakers.
c. To identify the association of sociodemographic, health, and lifestyle factors with the awareness and prevalence of diabetes.

METHODOLOGY:

A cross-sectional study among homemakers across different regions in Saudi Arabia towards awareness of the risk factors of diabetes. Data were collected using self-administered questionnaires, where sample respondents participated into the study out of will. The desired sample size was a sample that contained at least 300 respondents, where this size was determined using the $(n = \frac{NZ2P(1-P)}{D2+Z2P(1-P)}$. Respondents of both genders were considered with the only exclusion criteria being an individual below the age of 18 years. Sampling was done via single stage cluster sampling. Data were stored in Excel and analysed using SPSS. The design was majorly descriptive where that aimed ate exploring the knowledge and attitudes of the people of Saudi

Arabia on the killer majorly life style disease diabetes.

ANALYSIS AND RESULTS:

The present study enrolled 195 female and 174 male respondents where the proportions did not significantly vary at 5% level p=.275. Most respondents had college education 265 (65.3%) as their highest level of education. The number of respondents that said they had been checked their blood sugar levels recently was 173(46.9), while those who had not been checked their blood sugar levels were 195(53.1). These numbers did not significantly vary at 5% level. Less than 20% of the respondents (19.8%) said they were diabetic, a percentage which was also almost similar to the percentage of respondents who said they did physical exercise regularly. Herbal medicine intervention was embraced by 23% of the total sample respondents. However, 51.0% of the respondents said they preferred both herbal and tablet medicine, as compared to 31.9% who preferred tablet medicine. Table 1 presents the descriptive statistics pertaining to the sample of respondents. The average sample age was M=33.72 years with a deviation from this sample mean of 13.471 years.

Table 1: Descriptive Statistics

Variable	Freq.(%)	p-value
Gender		.275
Female	195(52.8)	
Male	174(47.2)	
Education level		.000
College	241(65.3)	
High school	98(26.6)	
Primary school	30(8.1)	
Marital status		.323
Married	194(52.6)	
Not-married	175(47.4)	
Checked blood sugar		.323
No	196(53.1)	
Yes	173(46.9)	
Diabetic		.000
No	302(81.8)	
Yes	67(18.2)	
Medication		.000
Yes	263(80.2)	
No	65(19.8)	
Regular exercise		.000
No	289(78.3)	
Yes	80(21.7)	
Consumption of sugary beverages		.639
No	189(51.2)	
Yes	180(48.8)	
Daily hours of sleep		.477
<8hours	112(30.4)	
8hours	129(35.0)	
8hours>	128(34.7)	
Habit of napping		.000
No	137(37.1)	
Yes	232(62.9)	
Regular health check-up		.000
No		
Yes	248(67.2)	
	121(32.8)	
If diabetic taking herbal medicine		.000
No	233(73.3)	
Yes	85(26.7)	
Medicinal preference		.000
Herbal	49(17.0)	
Tablet	92(31.9)	
Both	147(51.0)	

Our findings also showed that diabetes condition was significantly associated with gender, marital status, exercise condition, and habit of taking naps p<.05 in all mentioned cases. Diabetes condition significantly differed with age p<.01. The sample mean age of respondents who said they were diabetic was M=48.78 years, SD=14.224, while the sample age for individuals who said they were not diabetic was 3038, SD=10.76. The mean difference in age between diabetics and non-diabetics was M=18.4, [95% CI (15.4, 21.4), p=.000]. Table 2 indicates the inferences over associations between different general lifestyles and diabetes condition.

Table 2: Chi-square population inference on associations

Variables	p-value
Diabetic condition	
Gender	.000
Marital status	.000
Education	.000
Diet	.000
Exercise	.022
Consumption of sugary beverages	.002
Hours of sleep per day	
Habit of taking naps	.267
	.000

DISCUSSION:

The common belief among the general public is that diabetes of both types is primarily a health condition linked to poor eating and metabolic lifestyles. Scholarly concerns confirm that while lifestyle is not the only influencer or risk factor for diabetic condition, it's a prevalence that can be managed by maintaining a generally healthy lifestyle. The intent of the present study was to understand just how much the general public in Saudi Arabia knows about diabetes through understanding or alteration of general lifestyle habits that if left unchecked predispose one to diabetes. The present study was not based on an exclusive inference of the general population but a description of the different red-flags and activities that increase and help reduce chances of contracting diabetes.

The average sample age was M=33.72 years with a deviation from this sample mean of 13.471 years. Ferrara, et al. (2017) established that for men, a threshold age of 35 years significantly improved risks of progressing type 1 diabetes, which interacted with the effect of BMI. Our findings showed a significant difference in age between self-reported diabetics and non-diabetics [t(367)=11.886, p=.000, 95% CI (15.4,21.4)]. From our finding and the findings of Ferrara, et al. (2017), it can be concluded that as one ages, they increase their chances of developing type 1 diabetics. Most studies have established that males are more likely to develop diabetes mellitus but the differences in gender vary by culture, lifestyle, environment and socioeconomic factors (Vazquez, Duval, Jacobs Jr, Silventoinen, 2007; Kautzky-Willer, Harreiter, & Pacini, 2016; Mathur, et al. 2018). Males in Saudi Arabia usually have lower BMI scores than females. High BMI has been widely accepted and found to be a determinant of diabetes. This could explain the significant association between gender and diabetes condition, where 19% of the females reported to having diabetes as compared to 17.2% of males who reported to having diabetes. The earlier point of the difference in BMI between males and females in Saudi Arabia could be used to explain this significance. The association between level of education and condition of diabetes coincides with the finding of Steele, et al. (2017) that showed people with lower educational achievement were more likely to develop type II diabetes mellitus. This is probably due to the lack of knowledge of how to adjust their life styles to reduce the risks of diabetes. The role of exercise can be thought of as reduction of BMI and excessive unwanted weight which predisposes one to diabetes. Body weight is determined by two aspects which include; diet and regular exercise. The more carbohydrate related foods one consumes the more of it is stored under the skin as fat. Exercise helps in burning this excessive fat. Both diet condition and exercise were found to be significantly associated with diabetes condition, as it resonates with the findings of wide array of research. For instance, Way, Hackett, Baker & Johnson (2016) asserted that regular exercise improves the body's sensitivity to insulin, while Kirwan, Sacks & Newton (2017) explained that regular exercise is essential in management of type II diabetes. Guo, Cao, Wong & Yu (2017) established that long day time naps typically one-hour nap or longer increased significantly chances of developing diabetes, which was the probable reason taking nap during the day and diabetes condition were significantly associated.

CONCLUSION:

While the proportion of individuals who recently checked their blood sugar levels was almost half of the sample, attitudes as measured in regular health check-ups and regular physical exercise indicate low numbers, which calls for much more effort to increase attitude and lifestyle alterations that deter diabetes.

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