



## **Knowledge and Perception about Diabetes and its Risk Factors**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** Diabetes mellitus (DM) is a chronic metabolic disorder that increases the risks of developing other diseases in diabetic patients and can affect their quality of life.

**Aim:** The aim of this study was to determine knowledge and perception of risk of diabetes mellitus among the public in Saudi Arabia.

**Methodology:** The survey in the present cross-sectional study was conducted to determine the public knowledge and perception of risk of diabetes mellitus using a validated survey. The survey was converted to an online form using Google Forms.

**Results:** About 79.69% of the respondents use one or more medication and 70.31% of them had at least one chronic disease. About 34.37 % of the respondents were overweight respondents or had obesity. About 93.75% of the respondents said that they know the main risk factors and the protective factors of diabetes. More than 90 % of them have a good knowledge about diabetes and about antidiabetic drugs but more than 54% of them said that they need additional information about diabetes and about antidiabetic medications.

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**Conclusion:** Our study suggests that more efforts should be made to increase the public knowledge about diabetes and an awareness program including lectures, workshops are essential to avoid getting diabetes among the public and to maintain good glycemic control among diabetic patients.

*Keywords:* Antidiabetic medications; diabetes mellitus; knowledge; perception; risk.

## 1. INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder that increases the risks of developing other diseases in diabetic patients and can affect their quality of life [1,2]. Patients with diabetes are at higher risks of developing other health-related complications than nondiabetics, these complications include higher risks of developing cardiovascular complications, fertility complications, in addition to renal diseases [3-6].

Diabetes mellitus is one of the most common diseases recognized globally [7]. This is evident from the increased reporting of diabetes disease worldwide which is estimated to reach a figure of 366 million [8]. It is also anticipated to become the 7<sup>th</sup> leading cause of death by 2030 [9]. Diabetes global prevalence in 2014 was reported to be 8.5 % [9]. Diabetes is a global health concern that increase the morbidity and mortality rate [10]. Fareed et al reported that diabetes leads to macrovascular and microvascular complication and that the deficiency of the insulin actions in type 2 diabetes mitigates the health-related quality of life [11].

The prevalence of diabetes in developing countries is relatively high particularly, in Saudi Arabia [12]. According to the International Diabetes Federation, Saudi Arabia has the highest rate of DM in the Middle Eastern and North African region (rate of 17.7%) [13]. Al-Daghri et al conducted a cross-sectional study in 2011 and found that the prevalence rate for Type 2 Diabetes (T2DM) in Saudi Arabia was 31.6% [14]. Moreover, Alqurashi et al reported a prevalence rate for T2DM of 30% in 2009 [15]. The International Diabetes Federation reported that Saudi Arabia has the fourth highest incidence of Type 1 Diabetes (T1DM) in the world, at a rate of 33.5/100,000 persons per year [13].

Glycemic control is an important indicator to prevent the diabetic complications such as cardiovascular and kidney diseases. Alsulaiman et al indicated that about two-thirds of Saudi diabetic patients have poor glycemic control

[16]. Evidence suggests that the prevalence of diabetes is affected by numerous factors including early diagnosis, sociodemographic, and health knowledge [17]. Furthermore, optimal disease knowledge is vital for decreasing the related risk factors of inadequate glycemic control, so the assessment of the patient's mindfulness is critical [7]. Therefore, the aim of this study is to determine knowledge and perception of risk of diabetes mellitus among the public in Saudi Arabia.

## 2. METHODOLOGY

The survey in the present cross-sectional study was conducted to determine the public knowledge and perception of risk of diabetes mellitus using a validated survey in February 2021. The study population was the public in Saudi Arabia.

The survey was converted to an online form using Google Forms and consisted of items on socio-demographic data, the health status of the respondents and knowledge and perception of risk of diabetes mellitus.

Body mass index was calculated by dividing body mass by the square of the body height, and is expressed in units of kg/m<sup>2</sup>. The data was exported into Excel and the descriptive data were represented as numbers and percentages.

## 3. RESULTS

The survey was filled by 64 respondents. Most of them were females (85.94%), unemployed (85.94%) and non-smoker (90.63%). The Age of about 54.69% of the respondents was more than 40 years. Table 1 shows the socio-demographic data of the respondents.

Table 2 shows the health status of the respondents. About 79.69% of the respondents use one or more medication and 70.31% of them had at least one chronic disease. About 34.37 % of the respondents were overweight respondents or had obesity.

**Table 1. Socio-demographic data of the respondents**

Variable	Category	Number	Percentage
Gender	Male	9	14.06
	Female	55	85.94
Age	≤40	29	45.31
	>40	35	54.69
Marital status	Married	7	10.94
	Not married	57	89.06
Educational level	No formal education or School	23	35.94
	College degree or higher	41	64.06
Employment status	Unemployed	55	85.94
	Employed	9	14.06
Smoking status	No smokers	58	90.63
	Ex-smokers	1	1.56
	Smokers	5	7.81

**Table 2. The health status of the respondents**

Variable	Category	Number	Percentage
Do you use medication	Yes	51	79.69
	No	13	20.31
Do you have at least one chronic disease	Yes	45	70.31
	No	19	29.69
Body mass index	Underweight = <18.5	3	4.69
	Normal weight = 18.5–24.9	39	60.94
	Overweight = 25–29.9	12	18.75
	Obesity = BMI of 30 or greater	10	15.62

Table 3 shows the knowledge and perception of risk of diabetes. About 93.75% of the respondents said that they know the main risk factors of diabetes and 93.75% of them know the protective factors of diabetes. Approximately 82.81% of the respondents had a close relative with diabetes. Furthermore, more than 90% of them have a good knowledge about diabetes and about antidiabetic drugs.

#### 4. DISCUSSION

Most of the respondents in the preset study had one or more of the chronic diseases including such as diabetes and use at least one medication. Moreover, more than 80 % of them had close relatives with diabetes mellitus and about 40 % of them were worried of getting diabetes in the future.

**Table 3. Knowledge and perception of risk of diabetes**

Variable	Category	Number	Percentage
Do you know the main diabetes risk factors	Yes	60	93.75
	No	4	6.25
Do you know the main diabetes protective factors	Yes	60	93.75
	No	4	6.25
Do you have a close relative with diabetes mellitus	Yes	53	82.81
	No	11	17.19
Do you have a good knowledge about diabetes mellitus?	Yes	58	90.63
	No	6	9.37
Do you have a good knowledge about antidiabetic medications	Yes	60	93.75
	No	4	6.25
Do you need additional information about diabetes and about antidiabetic medications	Yes	35	54.69
	No	29	45.31
Are you worry of getting diabetes in the future	Yes	26	40.63
	No	38	59.37

Most of the respondents said that they have a good knowledge about diabetes mellitus and about antidiabetic medications but more than 54% of them said that they need additional information about diabetes and about antidiabetic medications. In contrast to that, Alanazi et al reported that most studies found a lack of public awareness of the risk factors and complications of diabetes mellitus [18]. Alqahtani et al stated that among Saudi adults in Riyadh, about 53.5% of the participants had good knowledge scores [19]. Aljofan et al reported that among the public in Hail region, Saudi Arabia, the majority of the participants shows high knowledge of diabetes (82%) [20].

Abouammoh and Alshamrani stated that among diabetic patients in Saudi Arabia, diabetic patients have adequate knowledge about diabetes and glycemic control, but valuable attention is yet required to provide necessary counselling to them in order to help them to control health risks and mortality [7].

Al-Aboudi et al reported that among patients with type 2 diabetes mellitus in Riyadh, only 13.3% had good knowledge about diabetes [10]. Furthermore, Abahussain and El-Zubier showed a deficiency of knowledge on the general aspects of diabetes mellitus [21]. They also concluded that awareness and education about diabetes are needed urgently among the studied sample [21].

## 5. CONCLUSION

This study showed that a high percentage of the respondents had a good knowledge, but they need additional information about diabetes and about antidiabetic medications. Our study suggests that more efforts should be made to increase the public knowledge about diabetes and an awareness program including lectures, workshops are essential to avoid getting diabetes among the public and to maintain good glycemic control among diabetic patients.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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