

Assessment of Knowledge, Attitude and Practice about Diabetes Complication Among Diabetic Patients Attending Diabetes Center At King Khalid Hospital in Tabuk, Saudi Arabia

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ABSTRACT

Introduction: Diabetes is a disease that affects the body's ability to produce or use insulin. Type 2 diabetes occurs when the body does not produce enough insulin, or when the cells are unable to use insulin properly, which is called insulin resistance. Complications of diabetes are attributed to prolonged levels of high blood glucose. Uncontrolled diabetes can lead to a number of short and long-term health complications, including hypoglycemia, heart disease, nerve damage and amputation, and vision problems. The majority of these diabetes-related conditions occur as a result of uncontrolled blood glucose levels, particularly elevated blood sugar over a prolonged period of time. It is essential that diabetics are aware of the complications that can occur as a result of diabetes to ensure that the first symptoms of any possible illness are spotted before they develop.

Methodology: A 50 diabetic patients who attend the diabetic center at King Khalid hospital in Tabuk city were enrolled in this study. The participants were given the options not to participate in the study if they wanted. Then by interview technique we collected the pre-test, give health education section and collect post-test data.

Results: Mean age of the participants was 51.8 years (\pm 11.5yrs). Majority were males 58%. Significant Improvement

in Knowledge on Diabetes was observed regarding Organs affected by diabetes and diabetes complication (P: 0.006) Significant Improvement in Positive Attitude was observed in increase awareness about diabetes complication and the role of physical activity and exercise in preventing diabetic complication (P:0.005)

Conclusion: This study highlighted the need for better health information to the patients to change the attitude and practices of public regarding diabetes.

Keywords: Diabetes, Diabetic, Tabuk, Saudi Arabia.

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INTRODUCTION

Diabetes is a disease that affects the body's ability to produce or use insulin. Insulin is a hormone. When the body turns the food into energy (also called sugar or glucose), insulin is released to help transport this energy to the cells. Insulin acts as a "key." Its chemical message tells the cell to open and receive glucose. If individual produces little or no insulin, or is insulin resistant, too much sugar remains in the blood. Blood glucose levels are higher than normal for individuals with diabetes. There are two main types of diabetes: Type 1 and Type 2 (most common).¹

Type 2 diabetes occurs when the body does not produce enough insulin, or when the cells are unable to use insulin properly, which is called insulin resistance. Type 2 diabetes is commonly called "adult-onset diabetes" since it is diagnosed later in life, generally after the age of 45. 90-95 percent of people with diabetes have

this type. In recent years Type 2 diabetes has been diagnosed in younger people, including children, more frequently than in the past.¹

Saudi Arabia is one of the 20 countries of the IDF MENA region. 387 million people have diabetes in the world and more than 37 million people in the MENA Region; by 2035 this will rise to 68 million. There were 3.8 million cases of diabetes in Saudi Arabia in 2014.² Saudi Arabia has one of the highest percentages of Diabetes in the world, with an estimated number of 2,065,300 people diagnosed with the disease by 2010, which is 16.8% of the population (although some studies have shown this percentage to be higher).

In terms of numbers, the three countries with the highest number of diabetics are India, China, and the United States. However,

these are also three of the most populous countries in the world, so higher numbers of diabetics makes sense, but what is interesting are the percentages of diabetics in these three countries in comparison to the percentage of diabetics in Saudi Arabia. In the United States, 10% of the population will have diabetes in 2010, 7.8% in India, and 4.2% in China, compared to the 16.8% in Saudi Arabia.²

The alarming prevalence of diabetes in Saudi Arabia has been called an epidemic by many studies. One study has noted the increase in awareness of the disease, however, which could be reflective of improvements in the healthcare system in the country. The high and increasing rates of diabetes in Saudi Arabia could be due to many factors, but most studies show that obesity and lack of exercise are very prominent factors.³

Complications of diabetes are attributed to prolonged levels of high blood glucose. Uncontrolled diabetes can lead to a number of short and long-term health complications, including hypoglycemia, heart disease, nerve damage and amputation, and vision problems. The majority of these diabetes-related conditions occur as a result of uncontrolled blood glucose levels, particularly elevated blood sugar over a prolonged period of time. It is essential that diabetics are aware of the complications that can occur as a result of diabetes to ensure that the first symptoms of any possible illness are spotted before they develop.⁴

People with diabetes are at very high risk of heart disease, also known as cardiovascular disease (CVD) and stroke (cerebrovascular disease). Over the years, high blood glucose (sugar) levels and high blood pressure can damage the kidneys and prevent them from functioning properly or even cause them to fail completely. About one-third of people who have had diabetes for more than 15 years will develop kidney disease, but good diabetes management and regular screening can prevent or delay the loss of kidney function. This effect of diabetes on the eyes is the most common cause of blindness in people age 65 years and younger and the most common cause of new blindness in North America. It is estimated that approximately two million individuals in Canada have some form of diabetic retinopathy. Diabetes affects the circulation and immune systems which, in turn, impairs the body's ability to heal itself. Over time, diabetes can damage sensory nerves (this is known as "neuropathy"), especially in the hands and feet. As a result, people with diabetes are less likely to feel a foot injury, such as a blister or a cut. Unnoticed and untreated, even small foot injuries like these can quickly become

infected, potentially leading to serious complications like amputation. Seven of 10 non-traumatic limb amputations are the result of diabetes complications. Although erectile dysfunction (ED) affects most men at some point in their lives, it is more common in men with diabetes. In fact, in up to 12 per cent of men with diabetes, ED is the first sign that leads to the diagnosis of diabetes. Older men with a longer duration of diabetes, poor blood glucose (sugar) control, and those who smoke, have high blood pressure, high cholesterol, and heart disease, are at highest risk. Approximately 25 per cent of people with diabetes suffer from depression.⁵

Quit smoking, management of high blood pressure, lifestyle modifications, Regular eye and foot examinations and/or medication are essentials to prevent diabetes complication. Foot Self-examination: People with diabetes should examine their feet every day. It is important to examine all parts of the feet, especially the area between the toes. Look for broken skin, ulcers, blisters, areas of increased warmth or redness, or changes in callus formation. Foot Clinical examination: During a routine medical visit, the clinician will check the blood flow and sensation in the feet. Test for microalbuminuria at least once per year, with a goal of less than 30 micrograms per milligram creatinine.⁶

METHODOLOGY

50 diabetic patients who attend the diabetic center at King Khalid hospital in Tabuk city were enrolled in this study. The ethical permission to conduct the study in king Khalid Hospital was taken. All the participants were explained about the purpose of the study and were ensured strict confidentiality and then verbal informed consent was taken from each of them before the interview. The participants were given the options not to participate in the study if they wanted. Then by interview technique we collected the pre-test, give health education section and collect post-test data.

Ethical Consideration

The study proposal was sanctioned by the ethical committee of the college.

Study was explained to participant and informed consent was taken from the participant.

Statistical Analysis

The collected Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) statistical program version 19.

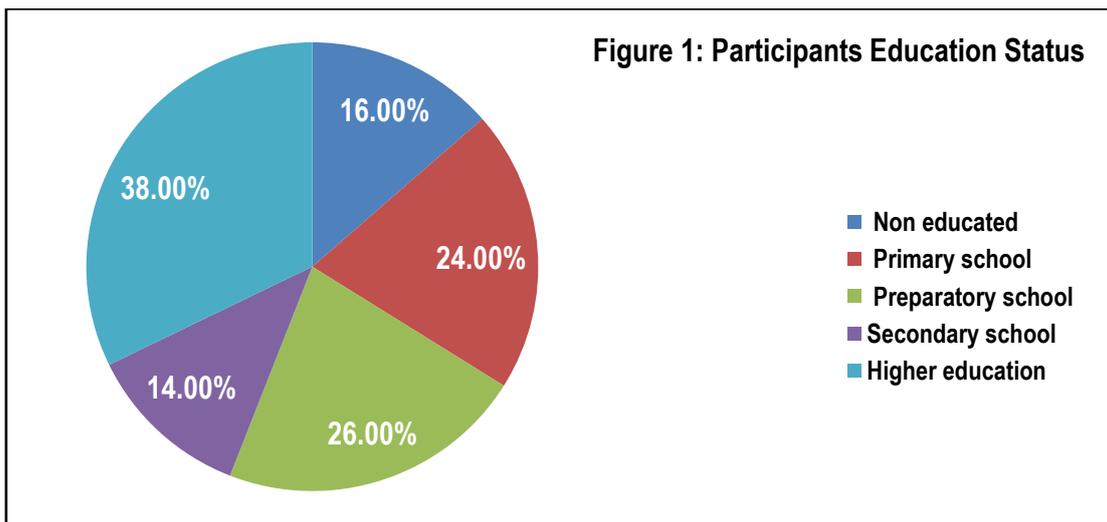


Table 1: Knowledge of participants about diabetes self care in both intervention and control groups

Items of knowledge		No. %	
		(50)	(100.0)
1. A diabetic should screen for blood sugar on a daily basis	Agree	44(88)	40(80)
	Disagree	6(12)	10(20)
	Don't know	0	0
		P: .388	
2. A diabetic patient should stop smoking to avoid a heart complication	Agree	39(78)	40(80)
	Disagree	7(14)	10(20)
	Don't know	4(8)	0
		P: .999	
3. Diabetes risk of heart disease and diabetes increases, including blood pressure and stroke	Agree	30(60)	40(80)
	Disagree	10(20)	10(20)
	Don't know	10(20)	0
		P: .006	
4. Diabetic retinopathy is one of the main reasons that lead to loss of vision	Agree	35(70)	39(78)
	Disagree	8(16)	10(20)
	Don't know	7(14)	1(2)
		P: 0.112	
5. Diabetes is the major causes of kidney failure disease	Agree	34(67)	38(76)
	Disagree	9(18)	12(24)
	Don't know	7(14)	0
		P: 0.387	
6. Diabetic neuropathy is one of the complication of diabetes	Agree	36(72)	39(78)
	Disagree	8(16)	10(20)
	Don't know	6(12)	1(2)
		P: 0.149	
7. Diabetic patient needs a special care for his foot	Agree	41(82)	40(80)
	Disagree	8(16)	10(20)
	Don't know	1(2)	0
		P: .999	
8. Having and maintaining healthy weight protects against diabetes and its complications	Agree	35(70)	38(76)
	Disagree	9(18)	11(22)
	Don't know	6(12)	1(2)
		P: 0.162	
9. Practicing exercise for 30 min/day in most of the days protects against diabetes and its complications	Agree	34(68)	38(76)
	Disagree	11(22)	12(24)
	Don't know	5(10)	0
		P: 0.343	
10. A healthy diet including three to five daily servings of fruits, limit intake of sugar and saturated fat protects against diabetes and its complications	Agree	35(70)	39(78)
	Disagree	9(18)	11(22)
	Don't know	6(12)	0
		P: 0.424	

RESULTS

The mean age of the participants was 51.8 years (\pm 11.5yrs). Majority were males (58%). Majority of them were belonged to middle/high socio-economic status (65.3%), 38% of them had higher education. (Figure 1)

Significant Improvement in Knowledge on Diabetes was observed regarding Organs affected by diabetes and diabetes complication (P: 0.006). (Table 1)

Significant Improvement in Positive Attitude was observed in increase awareness about diabetes complication and the role of physical activity and exercise in preventing diabetic complication (P: 0.005). (Table 2) Significant Improvement in participant practice was observed in doing exercise (P: 0.016), control diet (P: 0.004), wound caring (P: 0.000) and commit physician instruction (P: 0.035). (Table 3)

Table 2: Attitude of participants about diabetes self care in both intervention and control groups

Items of Attitude		Intervention group	
		No. % (50)(100.0)	
		Pretest	Posttest
1. In your opinion do you think that diabetes affects nervous system	Agree	38(76)	38(76)
	Disagree	9(18)	12(24)
	Don't know	3(6)	0
		P: .999	
2. In your opinion, do you think that are aware about diabetics complications	Agree		
	Disagree	24(48)	39(78)
	Don't know	15(30)	10(20)
		11(22) 1(2)	
		P: .005	
3. Do you think it is necessary for patients to follow-up to prevent complications	Agree	36(72)	40(80)
	Disagree	9(18)	9(18)
	Don't know	5(10)	1(2)
		P: .241	
4. From your point of view is specific diet can prevent the occurrence of complications	Agree	38(76)	40(80)
	Disagree	10(20)	10(20)
	Don't know	2(4)	0
		P: .687	
5. In your opinion, do you think that regular intake of treatment can prevent complications	Agree	37(74)	39(78)
	Disagree	9(18)	11(22)
	Don't know	4(8)	0
		P: .774	
6. In your opinion, do you think that exercise like walking is necessary to prevent complications ?	Agree	34(68)	32(64)
	Disagree	12(24)	2(4)
	Don't know	4(8)	0
		P: .038	
7. Do you think that smoking can worsen the complication of diabetes	Agree	38(76)	39(78)
	Disagree	8(16)	9(18)
	Don't know	4(8)	2(4)
		P: .532	
8. In your opinion, do you think that diabetic complications can lead to death?	Agree	36(72)	39(78)
	Disagree	6(12)	11(22)
	Don't know	8(16)	0
		P: .289	
9. In your opinion, do you think that the good control of blood glucose level can prevent from the diabetic foot	Agree	35(70)	38(76)
	Disagree	9(18)	10(20)
	Don't know	6(12)	2(4)
		P: 126	
10. In your opinion, do you think that obesity can predispose to the complication from the disease	Agree	36(72)	39(78)
	Disagree	12(24)	11(22)
	Don't know	2(4)	0
		P: .343	

Table 3: Practice of participants about diabetes self care in both intervention and control groups.

Items of practice		No. %	
		(50)	(100.0)
1. Do you eat small amounts of carbohydrates and fats to control your blood sugar level?	Yes	34(68)	39(78)
	No	15(30)	11(22)
	Sometimes	1(2)	0
		P: .146	
2. Do you refer regularly to your physician for follow up?	Yes	35(70)	39(78)
	No	15(30)	11(22)
	Sometimes	0	0
		P: .344	
3. Do you read about diabetes and its complications?	Yes	33(66)	39(78)
	No	13(26)	9(18)
	Sometimes	4(8)	2(4)
		P: .189	
4. Do you practice exercise to prevent complications?	Yes	28(56)	39(78)
	No	17(34)	11(22)
	Sometimes	5(10)	0
		P: .016	
5. Do you control your diet to prevent complications?	Yes	36(72)	24(48)
	No	12(24)	26(52)
	Sometimes	2(4)	0
		P: .004	
6. Do you increase the awareness about diabetes in your neighbors	Yes	35(70)	23(46)
	No	11(22)	27(54)
	Sometimes	4(8)	0
		P: .004	
7. Do you care about your wounds if happens	Yes	42(84)	24(48)
	No	7(14)	26(52)
	Sometimes	1(2)	0
		P: .000	
8. Do you check your physician in case of wounds or edema in your foot	Yes	35(70)	33(66)
	No	13(26)	17(34)
	Sometimes	2(4)	0
		P: .548	
9. Do you measure your blood glucose daily?	Yes	30(60)	28(56)
	No	18(36)	22(44)
	Sometimes	2(4)	0
		P: .669	
10. Do you commit with your physician instructions	Yes	37(74)	26(52)
	No	11(22)	23(46)
	Sometimes	2(4)	1(2)
		P: .035	

DISCUSSION

The present study showed an adequate level of knowledge among the participant in regard to diabetic risk factor, complication and prevention.

This result is in contrast to Aljoudi and Taha (2009) who reported "the lack of knowledge of risk factors of DM in Eastern Saudi Arabia".⁷In study done in Al-Qassim Region, revealed that a serious levels of unawareness about the complications of DM

(47.7%) among Saudi non-diabetic population.⁸ Malone et al (1989) assessed the effectiveness of diabetic foot education and they found that a lower incidence of foot ulcers in the group that received an hour of foot care education.⁹

Steps such as education about importance of dietary control and healthy life style are required to improve the health states of the patients and to decrease diabetes complication.

CONCLUSION

This study highlighted the need for better health information to the patients to change the attitude and practices of public regarding diabetes. It has also explored several aspects of diabetes related awareness and identified the need for improvement in their practices for treating and educating diabetics.

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