



AWARENESS OF ADULT OLDER THAN 40 YEARS ABOUT RISK FACTOR AND COMPLICATIONS OF TYPE 2 DM IN GAZA STRIP

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ABSTRACT

Background: 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 it produces. Insulin is a hormone that regulates blood sugar. Hyperglycemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time lead to serious damage to many of the body's systems, especially the nerve and blood vessels. (WHO). **Objectives:** To measure the level of awareness and complications of type 2 DM screening and risk factor among men over the age of 40 are aware of. **Methods:** A cross-sectional study was undertaken during the year 2019; the questionnaire is of eighteen items. Piloting twenty questionnaires were done, to assess the administrative and procedural logistics. The questionnaire was distributed and collected by the students. SPSS (version 17 for Windows) for descriptive statistics, Chi-Square and Student's t-tests were used for the statistical analysis. **Results:** 200 participants included in the study, 113 (56.5%) were male and 87 (43.5%) were female. 70 (35%) of participants were diabetic, 130 (65%) were no diabetic. Respondents cited; DM is due to insulin deficiency; $p = 0.002$, due to failure of pancreas to secrete insulin; $p = 0.004$, disturbances in lipid level are a risk factor for DM; $p = 0.052$, increase the risk of stroke and MI; $p = 0.022$, complications during pregnancy; $p = 0.155$, lead to hearing problems; $p = 0.161$. **Conclusion:** It's markedly prevalent the participants are with poorer knowledge of risk factors and complications were diabetic. It's more among females. We recommend health education; mainly the Ministry of Education and the Ministry of Health about risk factors and complications of DM.

KEYWORDS: Awareness, Diabetes, Risk factor, Complications, Gaza Strip.

INTRODUCTION

People with diabetes have quadrupled in the past three decades and diabetes is the ninth leading cause of death. About 1 in 11 adults worldwide suffer from diabetes, 90% of whom have type2 diabetes (T2DM).^[1]

It is expected to become the leading cause of disease burden for males and the second leading cause for females by 2023.^[2] Type 2 diabetes represents about 85-95% of all cases of diabetes.^[3] Depending on the World Health Organization, it is estimated that the total number of people with diabetes will double from 171 million in 2000 to 366 million by 2030.^[4] Environmental factors (e.g. obesity, an unhealthy diet recovery, physical inactivity) and genetic factors contribute to diabetes significantly.^[5] In addition, the relation between early life exposures and later life risk of metabolic disorders such as type 2 diabetes may be modified by lifestyle in adulthood.^[6] Among people with diabetes, a key factor influencing quality-adjusted life-years is the degree and nature of diabetes-related complications experienced by

patients over a lifetime.^[7] Up to 90% of type 2 diabetes cases are potentially preventable if individuals follow a healthful diet and lifestyle.^[8] The majority of people with diabetes have at least one complication, and cardiovascular complications are the main cause of morbidity and mortality in diabetic patients.^[1] It was studied also in the United States of America, showing that the risk of infection is much greater among obese men. In the United States, there is a strong correlation between bad eating habits and obesity with Type 2 diabetes and its complications.^[9] As well as the Arab community is known to have genetic tendencies for diabetes, dietary patterns and physical activity, the same role in his case.^[7] Nine out of every 10 Palestinians have at least one risk factor for a non-communicable disease, whether diabetes, heart disease, cerebrovascular disease, or cancer. About 58% of men and women aged 15–64 are overweight and of these, 27% are obese; 75.3% do not exercise and 20% are currently smoking.^[10] Unfortunately, knowledge of risk factors for diabetes in the community is enough.^[11]

Many diabetics patients do not know they have the disease until late in the, sometimes the disease is diagnosed after the emergence of complications, so we have to do research and know how much the adult over the age of 40 are is aware of Type 2 DM risk factors.

METHODS

This study is descriptive A cross-sectional study was conducted during the year 2019; a random sample of adults over the age of 40 will be selected from public places such as parks and mosques from the Gaza Strip. Sample size is 200 with Confidence interval is 6.78 according to sample size calculator.^[12]

The collection of the data from the public places, the participants were asked to complete a questionnaire, the questionnaire included two sections; the first section asked about the general personal information, the second section was divided into 2 branches asked about knowledge of a DM risk factors. The questionnaire was completed during face-to-face interview at public places. The data were collected by 5 of researchers who explained and clarified questions about people, it was taken into consideration of piloting 20 questionnaires to assess the administrative and procedural logistics. All participants were informed about the aim of the study

and that the Faculty of Medicine at the Islamic University of Gaza is the supporter of this research. Participants were assured about the anonymity and confidentiality of their identity and their responses.

The goal of the study was explained to the participants, and the Faculty of Medicine at the Islamic University in Gaza assured the participants in the study not to disclose their identity and confidentiality and their reactions.

The results were assessed using Statistical Package for the Social Sciences software (SPSS version 23). Descriptive statistics are expressed as frequencies, percentages and we used two Chi-square tests to compare results and values between diabetics and no diabetics, and between male and female.

Exclusion criteria: There were no specific exclusion criteria.

RESULTS

The participants were over age 40 years. Out of the 200 participants included in the study, 113 (56.5%) were male and 87 (43.5%) were female. 70 (35%) of participants were diabetic, 130 (65%) were no diabetic.

Table 1: Percentage distribution of frequencies of response concerning diabetic state.

		Diabetic status				P value
		Diabetic		Non-diabetic		
		n	%	n	%	
Does DM is due to insulin deficiency?	Yes	60	85.7	80	61.5	0.002
	No	7	10.0	40	30.8	
	Idk suresure	3	4.3	10	7.7	
Does DM is due to failure the pancreas to secrete insulin?	Yes	56	80.0	74	56.9	0.004
	No	9	12.9	43	33.1	
	Idk	5	7.1	13	10.0	
Do you think that excessive weight gain can cause DM?	Yes	45	64.3	94	72.3	0.319
	No	20	28.6	25	19.2	
	Idk	5	7.1	11	8.5	
Do you think that regular exercises decrease the possibility of DM?	Yes	57	81.4	108	83.1	0.813
	No	9	12.9	17	13.1	
	Idk	4	5.7	5	3.8	
Do you think that fatty meals can cause DM?	Yes	47	67.1	105	80.8	0.039
	No	16	22.9	14	10.8	
	Idk	6	8.6	11	8.5	
Do you think that hypertension can increase the possibility of DM?	Yes	40	57.1	70	53.8	0.68
	No	20	28.6	35	26.9	
	Idk	10	14.3	25	19.2	
Do you think that there is a relationship between the cardiovascular diseases and DM?	Yes	31	44.3	57	43.8	0.332
	No	28	40.0	42	32.3	
	Idk	11	15.7	31	23.8	
Do you think that the disturbances in lipid level are a risk factor for DM?	Yes	49	70.0	68	52.3	0.052
	No	12	17.1	34	26.2	
	Idk	9	12.9	28	21.5	
Do you think that insulin resistance is a leading cause for DM?	Yes	46	65.7	83	63.8	0.358
	No	16	22.9	23	17.7	
	Idk	8	11.4	24	18.5	
Do you think that advanced age increases the risk of	Yes	45	64.3	68	52.3	0.143

DM?	No	19	27.1	39	30.0	0366
	Idk	6	8.6	23	17.7	
Do you think that if a relative is diabetic increases the risk of developing diabetes?	Yes	48	68.6	81	62.3	
	No	14	20.0	24	18.5	
	Idk	8	11.4	25	19.2	

A frequency and Chi-squared test (X²) is used to measure the difference between diabetics and non-diabetics

Table (1): Respondents cited; DM is due to insulin deficiency; $p = 0.002$, due to failure of pancreas to secrete insulin; $p = 0.004$, DM cause excessive weight gain; $p = 0.319$, regular exercises decrease the possibility

of DM; $p = 0.813$, fatty meals cause DM; $p = 0.039$, hypertension can increase the possibility of DM; $p = 0.68$, DM cause cardiovascular disease; $p = 0.332$, disturbances in lipid level are a risk factor for DM; $p = 0.052$, insulin resistance is a leading cause for DM; $p = 0.358$, advanced age increases the risk of DM; $p = 0.143$, relationship increase risk of DM ; $p = 0.366$.

Table 2: Percentage Distribution of Frequencies of Response Concerning Gender.

Variable		Gender				P value
		Male		Female		
		N	%	N	%	
Do you think that DM can affect vision or even visual loss?	Yes	102	90.3	84	96.6	0.109
	No	5	4.4	0	0.0	
	Idk	6	5.3	3	3.4	
Do you think that DM can cause impairment in the function of peripheral nerves in the limbs?	Yes	77	68.1	67	77.0	0.273
	No	23	20.4	15	17.2	
	Idk	13	11.5	5	5.7	
Can the DM cause recurrent infection?	Yes	61	54.0	45	51.7	0.942
	No	29	25.7	24	27.6	
	Idk	23	20.4	18	20.7	
Can DM increase the risk of stroke and MI?	Yes	54	47.8	31	35.6	0.022
	No	36	31.9	23	26.4	
	Idk	23	20.4	33	37.9	
Does DM increase the risk of developing chronic renal diseases?	Yes	52	46.0	31	35.6	0.27
	No	32	28.3	26	29.9	
	Idk	29	25.7	30	34.5	
Does DM increase the risk of hypertension and atherosclerosis?	Yes	50	44.2	35	40.2	0.519
	No	42	37.2	30	34.5	
	Idk	21	18.6	22	25.3	
Does the DM cause damage of foot tissues?	Yes	76	67.3	61	70.1	0.793
	No	21	18.6	13	14.9	
	Idk	16	14.2	13	14.9	
Does the DM increase the risk of developing dementia and Alzheimer disease?	Yes	46	40.7	30	34.5	0.276
	No	35	31.0	23	26.4	
	Idk	32	28.3	34	39.1	
Does DM cause complications during pregnancy?	Yes	63	55.8	45	51.7	0.155
	No	21	18.6	10	11.5	
	Idk	29	25.7	32	36.8	
Does DM lead to hearing problems?	Yes	46	40.7	27	31.0	0.161
	No	40	35.4	29	33.3	
	Idk	27	23.9	31	35.6	
Dose DM cause impairment of wound healing?	Yes	76	67.3	62	71.3	0.275
	No	22	19.5	10	11.5	
	Idk	15	13.3	15	17.2	
Dose DM cause skin problems?	Yes	65	57.5	51	58.6	0.597
	No	28	24.8	17	19.5	
	Idk	20	17.7	19	21.8	
Is DM the commonest cause of limb amputation?	Yes	90	79.6	66	75.9	0.789
	No	14	12.4	12	13.8	
	Idk	9	8.0	9	10.3	

A frequency and Chi-squared test (X²) is used to measure the difference between diabetic male and females

Table (2): Respondents cited: DM cause misting of vision; $p = 0.109$, cause impairment in the function of peripheral nerves in the limbs; $p = 0.273$, cause recurrent infection; $p = 0.942$, increase the risk of stroke and MI; $p = 0.022$, increase the risk of developing chronic renal diseases; $p = 0.27$, increase the risk of hypertension and atherosclerosis; $p = 0.519$, cause damage of foot tissues; $p = 0.793$, increase the risk of developing dementia; $p = 0.276$, cause complications during pregnancy; $p = 0.155$, lead to hearing problems; $p = 0.161$, p cause impairment of wound healing; $p = 0.275$, cause skin problems; $p = 0.597$, cause of limb amputation; $p = 0.789$.

DISCUSSION

Knowledge of diabetes mellitus risk factors and complications is very important for diabetics and non-diabetics in order to prevent disease and implications if happened. We think that this research is the first one to study differences in awareness of DM risk factors and complications between diabetics and non-diabetics, In 2014 a study in Bangladesh; a similar study was to assess the level of awareness regarding the risk factors responsible for the development of type 2 diabetes and its determinants among individuals who attended a tertiary care hospital.^[13] This study results revealed that the participants are with poor knowledge of the risk factors and complications of diabetic, especially among females, and revealed that the awareness of risk factors of DM is higher among high education participants; 113(56.5%) were male and 87 (43.5%) were female, with a ratio of about 1.3:1 male to female ratio, this slight increase in male participants corresponds to the high numbers of them can achieve health education in public places; parks, mosques, streets and hospitals. Also, 70 (35%) of participants were diabetic, 130 (65%) were no diabetic, this wide difference in numbers contributes to the percentage of diabetics among general individuals, as many of the participants receive care from hospitals especially, still many diabetics as not aware about their disease and complications, this case similar is found in other study about compliance of diabetics and level of education.^[14] This study stated that the cause is not obvious because this type of studies (cross – sectional study) don't give us the causality of these results and also old age of diabetics don't deal well nowadays with internet websites and social media that gave a lot of information about health. The poorer knowledge of risk factors and complications in our study, among females and old age female as the interests in Gaza strip is that the females are mainly concerned for caring children and caring houses, but this is not true for males who all the time out of houses, in the mosques, and attending seminars where information is circulated. A systematic review which includes nineteen articles in 2018 - Saudi Arabia of awareness of risk factors among all population nearly, the study which did not call for optimism.^[15]

There were some limitations in the study

- The study timing was not the most stressful during the targeted academic year.
- The participants were not motivated to respond seriously.

CONCLUSION

Participants with poorer knowledge of risk factors and complications were diabetic, more often female, but the awareness of educated people is more concerning the risk factors for DM. We recommend all policy makers, mainly the Ministry of Education and the Ministry of Health work to increase the education programs of the risk factors and complications of DM.

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