



REASONS FOR THE SPREAD OF DIABETES IN THE CITY OF MECCA

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Abstract: The aim of the study is to find out the reasons for the spread of diabetes in Mecca and also to know the attitudes towards and opinions of Makkah residents towards diabetes, and an electronic questionnaire was distributed via social media (WhatsApp), due to social distancing and prevention. Crowding in public places (WhatsApp) for different neighborhoods of Mecca 1000 electronic questionnaires designed through Google Drive (random sample) were publicized via mobile groups to women and men from the age of 16 to over 65 years, and responses were received by about 600 people. Knowing that all participants are residents of the holy city of Mecca.

Keywords: diabetic patient

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DOI: - 10.53555/ecb/2022.11.6.52

1- Introduction: Diabetes is considered one of the serious diseases, furthermore, it spreads worldwide and is not limited to a specific age group or to a specific gender, as it makes doctors and scientists globally care about diabetes and focus their studies that help patients to improve the quality of life and decrease its complications, but there is lack of studies on prevention aspect, Diabetes mellitus is an ancient disease that man has known himself. The ancient Egyptians knew it since 1500 BC, so on some walls and ancient manuscripts, as mentioned in Chinese writings in the third century BC, a syndrome that includes gluttony, thirst, and urine, while mentioning the sweet taste of the urine of infected patients. With this syndrome (1).

This syndrome is characterized by metabolic disturbances with abnormal blood sugar levels caused by insulin deficiency, decreased sensitivity of tissues to it, or both (5). the syndrome leads to many serious complications and in many cases premature death; However, the patient can take certain steps to control diabetes and decrease the risk of its complications. These steps are reducing weight with increasing movement. As People with diabetes have difficulty converting food into metabolic energy; After eating a meal, the starches in it are broken down into glucose, this glucose molecule is transported via the blood to cells all over the body to be used in the processes of energy production. Most of the cells in the body need insulin to allow glucose from the blood and the intercellular medium to enter the cells; If the intake of food rich in sugar and starches is large, the liver and pancreas are unable to produce enough insulin to introduce sugar into the cells, as part of the sugar remains in the blood; which is known as type 2 diabetes. Diabetes results in the failure to convert glucose into energy. It leads to the availability of excessive amounts of it in the blood, despite that the cells became thirsty for energy. Over time, hyperglycemia develops, and causes severe damage to the nerves and blood vessels, leading to complications such as cardiovascular diseases, stroke, kidney disease, blindness, diabetic neuropathy, gum infections, and diabetic foot, which can lead to many cases of loss the limb. The symptoms suggestive of the diagnosis of diabetes are (6) polyuria (increased amount of urination) that results from high osmotic pressure, increased sense of thirst and results in increased fluid intake as a compensation mechanism, fatigue, weight loss despite eating regularly, more appetite, effecting the wounds healing processes, and blurred vision. The severity of these symptoms decreases if the increase in blood sugar concentration is slight, that is, there is a direct proportion between these symptoms and blood sugar. Blood sugar can be

reduced by reducing the intake of sweetened soft drinks and processed juices and complex carbohydrates such as pastries, pies and sweets; Movement (such as walking and sports) helps consume blood sugar. The World Health Organization divides diabetes into three main types: type 1 diabetes, type 2 diabetes, and gestational diabetes (7); Each type has its causes and spread places in the world. All types of diabetes are similar in that their cause is the insufficient production of the hormone insulin by the beta cells in the pancreas, but the reasons for the inability of these cells to do so are different according to the type (8); The reason for the inability of the beta cells to secrete sufficient insulin in the first type is due to the (autoimmune) destruction of these cells in the pancreas; While this reason for the second type is due to the presence of insulin resistance in the tissues in which it affects, that is, these tissues do not respond to the effect of insulin, which leads to the need for high amounts above the normal level of insulin; The symptoms of diabetes appear when the beta cells are unable to increase the production of insulin in the required amount. Gestational diabetes, like type 2 diabetes, also includes insulin resistance because the hormones secreted during pregnancy can cause insulin resistance in genetically predisposed women. A study conducted in the United States in 2008 found that many American women develop diabetes during pregnancy. In fact, the incidence of diabetes in pregnant women has more than doubled in the last six years (9), and this causes many problems because diabetes increases the risk of complications during pregnancy, and the risk of developing diabetes in the future child increases. While the expectant mother is cured as soon as the child is placed in the third type, the first and second types are consistent with the patient (6). All types of diabetes have been treatable since insulin became medically available in 1921. The first type - in which the pancreas does not secrete insulin - is treated directly with insulin injections in addition to lifestyle and diet adjustments. The second type can be treated with a combination of diet (adjustment of nutrition), taking pills, injections, and sometimes insulin injections. Whereas in the past, insulin was produced from natural sources such as the pig's pancreas, most of the insulin used today is produced by genetic engineering; Either by direct cloning of human insulin or modified human insulin to give a different speed and duration of action. An insulin pump that pumps it continuously can be implanted under the skin. Diabetes can cause many complications (short or long-term complications, or both). The short-term

complications are hypoglycemia, ketoacidosis, or hyperosmolar ketoacidosis coma due to high blood osmotic pressure. These complications occur if the patient does not receive adequate care. As for the serious long-term complications, they include diseases of the circulatory system (such as cardiovascular diseases, which are more likely to develop in the presence of diabetes), and complications include chronic kidney failure, retinal damage that can lead to blindness, nerve damage and it has many types, capillary damage that can lead to blindness. That leads to infertility and slow wound healing. Slow healing of wounds, especially of the feet, can lead to gangrene which can lead to amputation. Adequate care for the disease can reduce the risk of complications previously mentioned. Care includes ensuring that blood pressure is controlled as well as positive lifestyle factors such as stopping smoking, losing weight and maintaining a fit body. Diabetes is the most important cause of blindness for non-elderly adults in the developed world and the number one cause of non-injury amputations in adults as well. Diabetic renal failure is the leading cause requiring dialysis in the United States (10).

2-Material and Methods:

This study was launched in (the city of Mecca in the kingdom of Saudi Arabia), and began writing the research and then writing the questionnaire in March 2022, and the study ended with data collection in July 2022. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon, and (the reasons for the spread of diabetes in the city of Mecca). This type of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation, and use of the Office Group 2010 histogram for Excel to rank the results by dragging them on the statistical software (3).

3- Results and Discussion:

A questionnaire is an important and useful tool for collecting a huge amount of data. However, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because

the questionnaire consisted of thirteen questions, all of which were closed. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere (2). For the first question on glucose screening and diabetes detection, the percentage

those who agreed strongly were 13.6%, and the percentage of those who agreed was 16.3%, the neutrals of 7.5%, the non-consenting 32%, and the strong disapproving 30.6%. Regarding the second question about the existence of a health program (diet-sports) to follow up blood sugar measurement as a preventive measure against the risk of developing diabetes, the percentage of those who agreed strongly was 17%, and the percentage of those who agreed was 29.9%, the percentage of those who agreed, 14.3%, neutral, 21.8%, and strongly disagreed 17%. Regarding the third question about exercising continuously, as it increases the activity of blood circulation in the body, the percentage of those who agree strongly was 25.7%, the percentage of those who agree is 35.1%, the neutrals are 18.2%, the disapproval is 13.5%, and the strongly disagree is 7.4%. Regarding the fourth question about following up on walking and dieting after the end of the training period (after the end of the prescribed time period for the preventive program), the percentage of those who agreed strongly was 20.3%, and the percentage of those who agreed was 34.5%, the neutrals 19.6%, the disapproving 16.2%, and the strongly disapproving 9.5%. Regarding the fifth question about the health educator in the center or hospital affiliated with him, if it was confirmed that I was infected by educating me in terms of facts related to the disease and the need to adhere to preventive measures, the percentage of those who agreed strongly was 17.6%, and the percentage of those who agreed was 29.1%, and the neutrals 24.3%, and those who disagreed 12.8%, and those who disagreed severely 16.2%. Regarding the sixth question about consuming sweets and soft drinks on a continuous basis, the percentage of those who agreed was strongly 7.4%, the percentage of those who agreed was 30.4%, the neutrals 17.6%, the disapproval 33.8%, and the strongly disagreed 10.8%. Regarding the seventh question about raising awareness about the need to constantly monitor the body weight, sugar, and lipid levels in the blood to avoid symptoms of diabetes by a specialist doctor and health educator, the percentage of those who agreed strongly was 22.8%, and the percentage of those who agreed was 36.9%, the neutrals 16.1%, the disapproving 10.7%, and the non-consensus Strongly agree 13.4%. For the eighth question about eating fast food usually, the percentage of those who agreed

was 9.4% strongly, agree 32.9%, neutral 31.5%, disagree 21.5%, and strongly disagree 4.7%. Regarding the ninth question about raising the patient's family with diabetes aware of the need to help him accept the disease and live with it by participating in his psychological and social problems and helping him to solve them, the percentage of those who agree strongly was 14.2%, the percentage of those who agree is 34.5%, the neutrals are 29.1%, the disapproval is 5.3%, and the strongly disagree 16.9%. Concerning the tenth question about practicing the habit of smoking (cigarettes, hookahs, molasses, electronic cigarettes, pipes on a continuous basis, the percentage of those who agreed was strongly 8.7%, the percentage of those who agreed was 18.8%, the neutrals 14.1%, the disapproving 21.5%, and the strongly disapproving 36.9%. Regarding the eleventh question about diabetes, besides diabetes, there is a disease and heart problems and taking

medication for it, the percentage of those who agree strongly was 3.4%, the percentage of those who agreed was 12%, the neutrals 13.4%, the disapproval 23.5%, and the strongly disagreed 47.7%. Regarding the twelfth question about the current presence of psychological problems, anxiety and nervous stress in the home, family environment, sometimes work, and depression, the percentage of those who agree strongly was 8.1%, and the percentage of those who agree is 21.5%, the neutrals 18.8%, the disapproving 22.8%, and the strong disapproving 28.9%. Regarding the thirteenth question about a recent organ transplant operation, the percentage of those who agreed strongly was 4%, the percentage of those who agreed was 5%, the neutrals were 4.2%, the disapproval 19.5%, and the strongly disapproved 71.8%.

Table 1: People's trends and opinions about the causes of diabetes in Mecca

Questions	S. Agree	Agree	Neutral	Disagree	S. disagree
Checking my blood glucose and showing that I have diabetes	13.6%	16.3%	7.5%	32%	30.6%
The existence of a health program (dietary - sports) to follow up the measurement of blood sugar as a preventive measure against the risk of diabetes	17%	29.9%	14.3%	21.8%	17%
Doing exercise regularly, as it increases the activity of blood circulation in the body	25.7%	35.1%	18.2%	13.5%	7.4%
Follow-up the exercise of walking and diet after the end of the training period (preventive program)	20.3%	34.5%	%19.6	%16.2	%9.5
The health educator at the center or hospital educates me in terms of facts related to the disease and the need to adhere to preventive measures	17.6%	29.1%	24.3%	12.8%	16.2%
Consume sweets and soft drinks regularly	%7.4	%30.4	17.6%	33.8%	10.8%
Awareness of the need to constantly monitor body weight, sugar and fat levels in the blood to avoid symptoms of diabetes by a specialist doctor and health educator	%22.8	%36.9	%16.1	%10.7	%13.4
Usually eating fast food	%9.4	%32.9	%31.5	%21.5	% 4.7
Raising the awareness of the sick family about helping him accept the disease and coexisting with it, about his participation in his social and psychological problems and helping him to solve them	%14.2	%34.5	%29.1	%5.3	%16.9
Continuously practicing the habit of smoking (cigarette, hookah, honeycomb, electronic cigarette, pipe).	%8.7	%18.8	%14.1	%21.5	%36.9
Having a disease and heart problems and taking medication for it in addition to diabetes	%3.4	%12	%13.4	%23.5	%47.7
The presence of psychological problems, anxiety and nervous pressures at home and in the family environment, sometimes, and depression from them	%8.1	%21.1	%18.8	%22.8	%28.9
Recently had an organ transplant	%4	%0.5	%4.2	%19.5	%71.8

Conclusion:

The state, may God protect it, took care of its citizens, especially in the health aspect, as it built in all the different cities of the Kingdom, places called (walkways) in every garden, so that people could practice sports, and in these walkways-built

sports equipment so that people could practice sports with ease and ease. These public places should be used for exercise. and this study concluded with the following results:

Preserving health, because health is a crown on the heads of the healthy, not only the sick. A person

should maintain his health and grace, regardless of his gender (man or woman). You decide whether you want to live the rest of your life in the valleys, or live in good health, live for your sons and daughters and teach them And educate them, and a balance must be made between sweets and soft drinks, because their abundance is harmful to health, so it is necessary to be very careful about eating fast food, and eating a healthy home by eating fruits and vegetables in abundance because they are beneficial to health, and a daily program of sports should be made for at least half an hour available for exercise and running, Or participate in a sports club, whether men or women.

Acknowledgment:

To begin with, I would like to Praise God and thank Dr. Anas S. Dabool, from Umm Al-Qura University, Mecca, Saudi Arabia. And the researchers who make the project comes to light.

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