

Original Article

A Qualitative Study to Assess the Awareness Level of Diabetes Mellitus in Patients Coming to JPMC

1. Shaheen Akbar Agha 2. Muhammad Akbar Agha 3. Ruma Ashraf 4. Fareeha Khan
5. Tooba Chohan 6. Yusra Azhar

1. Asstt. Prof. of Community Medicine, SMC / DUCH Karachi 2. Asstt. Prof. of Haemtology, DIMC, DUHS, Karachi 3,4,5 & 6 House Officers of JPMC.

ABSTRACT

Objective: The study was conducted to assess the awareness level about diabetes in patients coming to JPMC and to initiate steps to increase their knowledge and clear misconceptions.

Study Design: Descriptive Cross-Sectional Study.

Place and Duration of Study: This study was conducted in JPMC hospital from April 2008 to October 2008.

Materials and method: A non- probability convenience sampling technique was applied in a population aged 15<n<80(n=230) through which both diabetics and non-diabetics were interviewed after taking informed consent using a pre-structured questionnaire. Details regarding awareness about diabetes in relation to their knowledge on diabetes, causes, signs and symptoms, complications, treatment, diet, physical activity, degree of diabetes in the patient and measures to enhance their knowledge and health on the subject were accordingly marked. The data has been analyzed using SPSS 10.0.

Results: In this study, 230 subjects irrespective of gender and age were assessed. 15% of the subjects were diabetics and most of them were unaware of the cause of the disease as well as of its complications, while the remaining 85% also had very little knowledge about diabetes and issues related to it.

Conclusion: The level of awareness was generally low amongst the general population. The study reveals the essential need for strategies to create awareness regarding diabetes in the lower socio economic group. Diabetic patients were well informed about the disease they were suffering from.

Keywords: Diabetes, Awareness, Knowledge, Health Education.

INTRODUCTION

“Diabetes mellitus is not a single disease entity, but rather a group of metabolic diseases sharing the common underlying feature of hyperglycemia. Hyperglycemia in diabetes results from defects in insulin secretion, insulin action, or most commonly both.”¹ Physiologically the blood glucose levels are closely regulated by the pancreatic insulin. “Blood glucose values are normally maintained in a very narrow range, usually 70-120mg/dL.”¹ The diagnosis of the available experimental and clinical evidence suggests that the complications of diabetes are a consequence. DM is recognized by the increased blood glucose levels, classical signs and symptoms, by either random glucose level (>200mg/dL), fasting glucose level (>126mg/dl) or an abnormal oral glucose tolerance test (OGTT) (>200mg/dL).¹ The net effect is a chronic disorder of carbohydrate, fat, and protein metabolism with long term complications affecting the microvascular and macrovascular systems of the body including blood vessels, cardiovascular system, kidneys, eyes, and nerves.

Risk factors of diabetes include certain medications, sedentary lifestyle, race, stress, pregnancy, hypertension, high cholesterol, obesity, age (65+), and

family history. The onset is marked by polyuria, polydipsia, polyphagia, and in certain extreme cases can lead to ketoacidosis. The contradiction of polyphagia and weight loss is paradoxical and should always raise the suspicion of diabetes.¹

Presently Pakistan contributes 6.2 million diabetics in the global pool of diabetes and if strategies for prevention are not taken the predictive figures for the year 2025 will jump to 11.6 million that is double the current figures. According to WHO, annual 2% reduction in chronic disease death rates in Pakistan would provide an economic gain of 1 billion dollars over the next 10 years.² According to a WHO report mortality rate due to diabetes may double in the next decade if neglected.³

Due to rapid increase in the incidence of diabetes in Pakistan, preventive strategies are needed to be targeted towards a healthy population. Preventive programs targeted towards general population show greater benefits in this situation rather than targeting only high risk and diseased population. However, it has been known that knowledge alone is not sufficient to bring about behavioral change in population. Lifestyle modification and/or medication (e.g., metformin) are cost-effective in reducing the incidence of T2DM. However, their application is not yet routine practice.⁴

Consumption of healthy food concept is not clear among the general population, requiring assessment of public knowledge and awareness about healthy diet.⁵ During the past ten years there is an innovation in the diet and nutrition pattern in diabetes. Today nutritionist advises a strict restriction of fat intake and allows a lot of fiber and complex carbohydrates.”⁶

The present research paper focuses on the awareness level of diabetes amongst the patients coming to JPMC, and to increase the knowledge of diabetes in the community. The study aims to elicit information that will aid in the development for future research on the subject and on enlightening the community of the potential risks of diabetes and how it can be prevented.

MATERIALS AND METHODS

In order to gather baseline measures of public awareness and attitudes towards diabetes mellitus a descriptive cross-sectional study was conducted in JPMC hospital from April 2008 to October 2008. In a population aged 15<n<80 comprising of both males and females, diabetics and non-diabetics, 230 individuals were interviewed after taking their informed consent using a pre-structured questionnaire. The patients coming to the different wards and OPD were selected by a non-probability convenience sampling technique coming to the different Wards and O.P.D.

A three sheet questionnaire was prepared for participants asking for open-ended responses to the questions. Details regarding awareness level about diabetes, in relation to their knowledge on diabetes, causes, signs and symptoms, complications, treatment, diet, physical activity, regarding personal associations with the disease were asked. Each participant was interviewed individually with the questionnaire and the answers were ticked appropriately. The resultant computer database was analyzed using the Statistical Package for the Social Sciences (SPSS) version 10.0.

RESULTS

The overall awareness level was low with misconceptions prevailing in communities probably due to inadequate knowledge. However behavioral change is not solely dependent on information and knowledge rather is influenced by various social, cultural, socio-economic and health factors.

Statistical analysis has shown that sixty nine percent responded diabetes as a ‘disease’ and didn’t know beyond and the rest thirty percent didn’t know at all. Among the interviewees 14.8% were diabetic whereas 40% had never tested for diabetes.

24% believed that DM is contagious whereas 54% were aware of the fact that it is the fastest growing non-infectious disease in the world. 67% assumed that people having family history of DM were more prone

to developing the disease. Only 52% knew that it has no cure once developed and 82% believed that blood sugar levels can be controlled by a balanced diet.

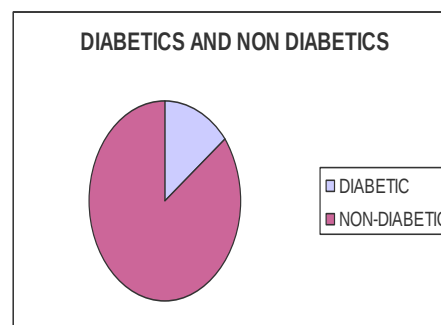
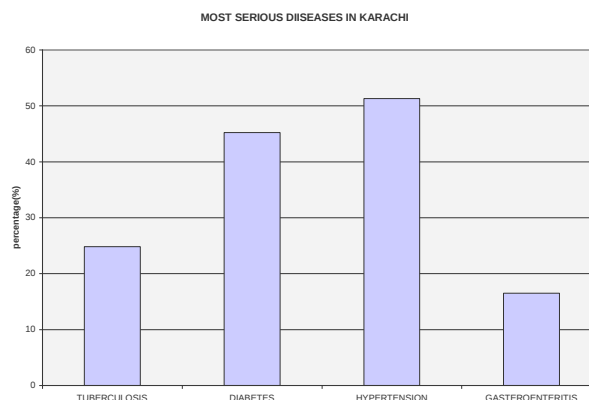
Table No.1:

Statements	%
Dm is caused by:	
• Eating too many sweets	66.5
• Pregnancy	23.0
• Insulin imbalance(some endocrinal disorder)	20.0
• Use of certain drugs	13.9
• Infection	19.1
• Supernatural/ god’s curse	20.0
• Don’t know the causes	14.3

Table No.2:

Statements	%
• Sedentary life style	41.3
• Smoking	32.6
• High fat diet	32.6
• Obesity	57.0
• Stress	67.0

Illustration No. 1



Factors responsible for diabetes mellitus:

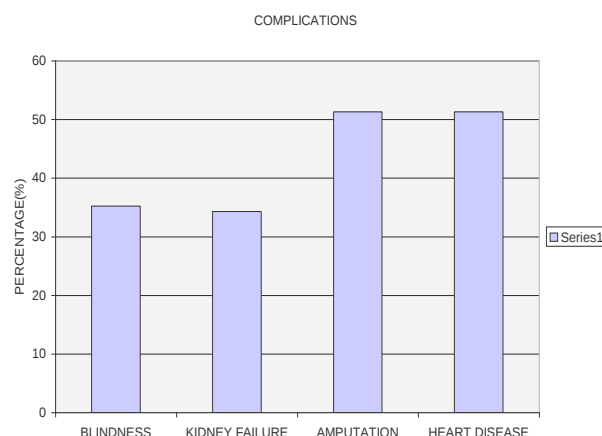
When asked about the source of information 18.7% read it from newspapers, 43.9% heard it from people, 24.8% got the information from a doctor, and 11.3%

had never heard of it. When inquired about family member being diabetic 45.2% replied in affirmative. 45.7% often suffered from tingling or burning pain in feet or toes.

Table No.3:

Statements	%
Polydypsia	41.7
Polyphagia	34.3
Polyuria	43.0
Decreased desire for water	4.8
Decreased appetite	6.5
Decreased micturition	3.0
Weight loss	36.1
Weight gain	10.4
I don't know	32.2

Illustration No. 2



The table No. 3 and the Illustration No 2 present the results of the symptoms and complications of Diabetes Mellitus patients in the patients coming to JPMC

DISCUSSION

Educating the masses about diabetes is widely acknowledged as being vital to initiating diabetes therapy. The study conducted gave an insight into the level of awareness present amongst people about this disease. The study found that the majority of the individuals had never received education on diabetes, as can be seen in various other studies.^{7,8,9}

The data from a study done in rural Islamabad grossly indicates that a significant number of the population have little or no awareness of Diabetes Mellitus. Amongst those familiar with the disease labeled it as 'sugar' instead of 'diabetes'. Information about the disease was not through any health education program but rather through affected relatives,¹⁰ similar findings are further validated in this study.

It is interesting to know that majority responded that it is a 'disease' and did not know beyond. The rest were

not even aware of the fact that Diabetes Mellitus is a disease. Of the people asked, very few were actually diabetic but the level of awareness amongst those individuals about the disease and its complications was comparatively high which is in contradiction to a study done in Nepal that revealed a low level of knowledge, attitude and practice even amongst diabetic patients.¹¹ However, the overall knowledge about the disease and its complications was low among the study participants, which is in accordance with other studies.^{12,13}

Many myths and misconceptions regarding diabetes are prevalent in our society which is not surprising considering the fact that the vast majority of the population is illiterate. The most common one being that eating too many sweets causes Diabetes.¹⁴ Other myths include diabetes being considered a contagious disease and that spiritual factors like witchcraft and super natural causes lead to DM.

A sizable portion of the people interviewed stated that they were unaware of early signs and symptoms. This is an alarming situation as most of the DM early symptoms are non-specific and the complications of this emergent disease can only be controlled by an early diagnosis and proper treatment and personal care. It has been stressed in one study that there is a need to enhance the basic health need assessment in communities on a large scale with the view to deal emerging health issues of diabetes. Health education programs with facilities and training in regional languages for better compliance is the need for the hour.¹⁵

An increasingly sedentary lifestyle partly due to the over dependence on technology and poor eating habits have contributed to the concurrent escalation of diabetes and obesity worldwide. A study done recently in China clearly shows that lifestyle interventions could decrease the risk of diabetes mellitus, help their transferring into normal blood glucose, and improve diabetic measures for the IGR population in Shanghai urban communities.¹⁶

In this study, most of the participants believed that obese people had a higher risk of developing diabetes than non-obese individuals. Globally the prevalence of obesity is increasing dramatically, so much so that in some countries, all most half of the people are overweight. With a 34% prevalence of hypertension, an aging population, high prevalence of obesity, and a sedentary lifestyle, there is an estimation of a rise in 85% of the prevalence of diabetes in South-America, for the next decades.¹⁷ A number of studies have shown the beneficial effect of weight reduction in helping to control and prevent Diabetes. One such article went on to conclude that obesity in Type 2 diabetic individuals should be given prime importance and weight reduction as a necessary step.¹⁸

Undoubtedly stress has major effects on metabolic activity of the body. According to this study, a majority of subjects interviewed had the same opinion. When one is stressed, the blood sugar levels rises. A research conducted by the American psychosomatic society highlighted that one of predisposing factor of chronic hyperglycemia in diabetes is stress, although its exact mechanism is ambiguous.¹⁹

When asked about the complications, less than half of the participants knew about all the complications. Diabetes brings with it several life-threatening complications if not properly treated, which can be prevented if detected early. A research study on the association of diabetes and cardiac manifestation it was found out that, the relative risk of a heart attack in type 2 diabetics is more than double than non diabetics where as the absolute risk of diabetic patients without a history of myocardial infarction seems to be equal to risk in non diabetics with an episode of previous infarction.²⁰

“About 20-40% of diabetics are reported to have neuropathy of which almost 50% are likely to develop symptomatic peripheral vascular disease within twenty years of diagnosis”.²¹ In diabetics ulcers of the foot are common when treated there is a chance of reoccurrence, diabetic foot effects the quality of life, may be fatal or lead to amputation of the limb. “the life time risk for any diabetic patient is up to 15%”.²²

Generally people with diabetes suffer tingling, pins and needles, burning or pain or loss of sensations in feet, toes or lower limb. Nearly half the people claimed to have experienced such sensations, which shows that these people might have an underlying disease, for which they might have not been tested. The association of Diabetes with myocardial infarction and stroke is sixth on the mortality list. Furthermore the incidence of blindness in the age group 20-74, the lower limb amputation due to diabetic neuropathy and 43% all end-stage renal failures are due to diabetic kidneys related to diabetes.²³

The source of information plays a very important role in the awareness of the disease. In our study, a large percentage of people received information about the disease from an affected family member or friend, while very few seemed to have information from the media or newspapers. Diabetes is a multifactorial disease its socio- cultural effects demands the need and support of the family, friends and diabetic clubs.

It is important to educate people about the spread of the disease, and for that community's participation is equally needed. One such study is focused on health promotion and primary health care approach which can address the issues of health education and counseling programs to deal with the apprehensions and phobias which stigmatize the diabetics so that they can lead

satisfactory lives through change in behavior and attitude.²⁴

Prevention is better than cure. According to our study, a significant number of participants believed that blood sugar levels could be controlled by taking a balanced diet, indicating their high level of awareness regarding the importance of diet in relation with DM. Although there is no special diet for DM, but a healthy balanced diet, low in fat and rich in fiber is the key to a healthy life. An “evidence-based review using meta-analyses techniques largely support the strong majority recommendations of the international diabetes community. Strong RCTs support these recommendations: intake of carbohydrate of $\geq 55\%$ or 55–65% of energy, dietary fiber intakes of 25–50 g/d (15–25 g/1000 kcal), total fat intakes of $<30\%$ of energy and incorporation of the glycemic index into diabetes counseling. There is very strong support for the recommendation that diabetic individuals achieve and maintain a desirable body weight with a BMI ≤ 25 kg/m²”.²⁵

CONCLUSION

The study reveals the essential need for research based health promotion programs to create awareness about diabetes in the lower socio economic strata of the city. Diabetics require a complete change in life style in relation to diet and exercise.

In conclusion, JPMC a tertiary care hospital in Karachi demonstrated that the level of awareness about diabetes mellitus is low amongst the community who are not suffering from the disease, whereas the diabetic patients are well informed about the disease which reflected in their approach towards the disease.

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Address for Corresponding Author:

Shaheen Akbar Agha
 202-B. Amber Towers
 Plot No. 22-A, Main Sharea Faisal
 Block-6. PECHS
 Karachi-75400
 Phone: 0333-2215280, 0333-2112930
 E.mail: dr_s_gha@yahoo.com