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# Knowledge, Attitude and Practice Regarding Diabetes Mellitus in Diabetic and Non Diabetic Population

Medical Science

**KEYWORDS :** Diabetes mellitus knowledge ,Practice , Drug adherence

**Dr Piyush Makwana** Resident,Physiology Department ,B.j.medical College ,Address-Amraiwadi ,Ahmedabad

**Dr Anju Mehta** Additional Professor, Physiology Department, B.j.medical College. Vastrapur, Ahmedabad

## ABSTRACT

*Backgrounds and objectives : This study was aimed to assess the knowledge and awareness among diabetic and non diabetic population towards diabetes mellitus, different knowledge domain and, to evaluate diabetic patients' awareness towards anti-diabetic therapy, hypoglycemia management and their practical approach towards diabetes mellitus control.*

*Material and method : This was a cross sectional study based on validated self administed questionnaires on diabetes mellius awareness,knowledge and practice performed on 100 subjects including 50 diabetic and 50 nondiabetic.*

*Result : In diabetic patients 78% patients were aware about diabetes etiology which is more in male . 65% patients of diabetic aware about medication knowledge ,60% patients aware about investigation knowledge , 45% patients aware about complication knowledge, 60% patients aware about hypoglycaemic symptoms. While in nondiabetic subjects 60% aware about diabetes etiology which is more in female . 50% nondiabetic subjects aware about medication knowledge ,60% aware about investigation knowledge ,30% subjects aware about complication knowledge ,40% aware about hypoglycemic symptoms .The study highlighted the need of people for better health information through large scale awareness intervention regarding diabetes .*

*Conclusion : There is definite need to empower patients with knowledge required to help them obtain maximum benefit from their treatment for diabetes .*

## INTRODUCTION

According to World Health Organisation (WHO), India today heads the world with 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030. There is a very little data on the level of awareness and prevalence about diabetes in developing countries like India. Studies have shown that increasing patient knowledge regarding disease and its complications has significant benefits with regard to patient compliance to treatment and to decreasing complications associated with the disease. This study was undertaken to identify, investigate and evaluate the knowledge on diabetes among the patients and general population which would be helpful in planning health programs to the patients.

## MATERIALS AND METHODS

Cross sectional study was carried out in diabetic and nondiabetic population .A structured questionnaire was used to assess the knowledge of diabetes among the patients and general population. A nonrandomized sampling strategy was used. Inclusion criteria diabetic patients, with Type 1 or Type 2 diabetes mellitus, and non diabetic individuals who were willing to participate in this study. The questionnaire was divided into two parts. The first part included information on socio-demographic characteristics of the participants (gender, age, education and occupation). The second part included fifteen questions focused on the knowledge of diabetes etiology (high blood sugar and low insulin level in blood), clinical manifestation (increased thirst, urination frequency, tiredness and slow healing of wound), complications ( eye and kidney problems, foot ulcers and heart problems), management by life style modification required for diabetic (weight reduction, stopping smoking and alcohol), factors help in controlling blood sugar (regular exercise, blood sugar monitoring, planned diet, medication and education), antidiabetic drug used in DM treatment (insulin, metformin, giburide), drug therapy ,utilization and adherence (diabetic medicine can be stopped immediately, after one month or should be continued lifelong, and can diabetic person miss his/her medication dose), monitoring method (checking blood or urine sugar level), hypoglycemic symptoms (weakness, confusion, visual disturbances), hypoglycemia management (taking sugar, or medicines or insulin), various diagnostic domain involved in controlling DM (frequency of eye examination, urine test and blood pressure test recommended for diabetic patients) .This study was conducted on diabetic population and general population in outpatient department civil hospital, Ahmedabad . The data was analysed using MSExcel and Graph pad prism version 5.

## RESULTS

A total of 15 questions were interviewed to the 50 Diabetic patients and 50 nondiabetics . Their age range between 20 -70 years. Most of the patients were in the age group of 41-50 years. Male are 52% and Female are 48%. Table 1 shows demographic characteristics of Participitance . The highest educated group for both diabetic and non diabetic participants have diploma 55% .65 % Population is employed .In diabetic patients 78% patients aware about etiology of diabetes which is more in male .65% patients of diabetic aware about medication knowledge ,60% patients aware about investigation knowledge , 45% patients aware about complication knowledge, 60% patients aware about hypoglycaemic symptoms. While in nondiabetic subjects 60% aware about etiology of diabetes which is more in female 50% nondiabetic subjects aware about medication knowledge,60% aware about investigation knowledge ,30% subjects aware about complication knowledge ,40% aware about hypoglycemic symptoms. In diabetic population 40 % are overwight ,while in nondiabetic patients 20 % are overweight .family history was positive in 70 % population in diabetics.

**Socio-demographic profile of surveyed population**

| Sociodemographic profile | Diabetic | | Nondiabetic | |
|---|---|---|---|---|
| | Male | Female | Male | female |
| Age group | | | | |
| 20 -30 | 0 | 0 | 10 | 8 |
| 30 -40 | 3 | 2 | 4 | 2 |
| 40 -50 | 16 | 7 | 7 | 15 |
| 50 -60 | 10 | 10 | 2 | 1 |
| 60-70 | 0 | 2 | 0 | 1 |

**Education status**

| Education status | Diabetes | | Nondiabetic | |
|---|---|---|---|---|
| | Male | female | Male | female |
| Illiterate | 2 | 4 | 1 | 2 |
| Diploma | 15 | 16 | 14 | 10 |
| graduation | 5 | 8 | 13 | 10 |

**Body Mass Index**

| BMI | Diabetes Male | female | Nondiabetic Male | female |
|---|---|---|---|---|
| Underweight | 3 | 4 | 5 | 7 |
| Normal weight | 5 | 6 | 8 | 6 |
| Overweight | 8 | 11 | 7 | 5 |
| Obese | 6 | 7 | 8 | 4 |

| Occupation | Diabetes Male | female | Nondiabetic Male | female |
|---|---|---|---|---|
| Employed | 18 | 6 | 23 | 8 |
| Unemployed | 4 | 22 | 5 | 14 |

**Diabetes mellitus status**

| Type of diabetes mellitus | Male | Female |
|---|---|---|
| Type 1 | 4 | 6 |
| Type 2 | 18 | 22 |

**Duration of diabetes mellitus**

| Duration of diabetes mellitus | Male | Female |
|---|---|---|
| 0-6 months | 2 | 3 |
| 6 -12 months | 3 | 5 |
| 1-5 years | 5 | 7 |
| 5-10 years | 4 | 4 |
| 10-15 years | 3 | 5 |
| 15-20 years | 3 | 2 |
| >20 years | 2 | 2 |

**Number (%) of Participants Correct Response towards DM Knowledge Domain**

| Knowledge domain | Diabetes subjects Male (29) | Female (21) | Nondiabetic subjects Male (23) | Female (27) | Total 100 |
|---|---|---|---|---|---|
| Etiology | 20 | 18 | 13 | 14 | 65 |
| Clinical manifestation | 17 | 19 | 12 | 15 | 63 |
| Complication | 12 | 10 | 10 | 6 | 38 |
| Blood pressure risk factors | 11 | 15 | 11 | 10 | 47 |
| Management | 13 | 14 | 12 | 13 | 52 |
| Physical control | 15 | 16 | 15 | 10 | 56 |
| Monitoring | 14 | 12 | 13 | 17 | 56 |

About 21% of diabetic subjects are unaware about the management of DM by life style modification. Diabetes Mellitus if not treated can lead to different complication problems, 17% of diabetic subjects are unaware about these complications. About 27% of diabetic subjects are unaware about risk problems associated with high blood pressure during diabetes mellitus. Diabetic participants' awareness about antidiabetic therapy they used in the treatment of DM is low. 41% of diabetic participants don't know the name of antidiabetic drug they utilized. About 15% said by antibiotic, 25% insulin, 12% Diabetic subjects awareness about antidiabetic drug utilization is low. 44.9% said antidiabetic therapy should be continued lifelong while 11.5% therapy can be stopped immediately after improvement of sugar level, 7.5% can be stopped after one month and 36% don't know. Diabetic participants' adherence to their therapy is low. 35% of diabetic participants missed the doses of their diabetic medications. Frequency of dose missing was varied 20.5% said occasionally, 8.5% once a week and 6% once a month Hypoglycemia may occur during the treatment with antidiabetic therapy. Table 4 shows the comparison between diabetic male and female knowledge percentage response towards hypoglycemic symptoms. 67.07% (n=55) of female are aware about hypoglycemic symptoms compared with 62.85% (n=22) for male.

**Comparison between Diabetic Male and Female (%) Correct Knowledge Response towards Hypoglycemic Symptoms**

| Symptoms | Diabetic Male | female | Total (50) |
|---|---|---|---|
| Weakness | 18 | 14 | 32 |
| Confusion | 19 | 12 | 31 |
| Visual disturbances | 18 | 15 | 33 |
| Don't know | 11 | 11 | 22 |

**Table 5: Number (%) of participants who have correct knowledge in various aspects**

| Various aspects | Male (52) | female(48) | Total(100) |
|---|---|---|---|
| Eye examination | 22 | 21 | 43 |
| Blood sugar test | 37 | 32 | 69 |
| Blood pressure | 38 | 32 | 70 |
| Urine test | 40 | 39 | 79 |

53.8% (n=63) of diabetic participants are unaware about the management of hypoglycemic symptoms. Surprisingly about 10% of diabetic participants said by insulin .Table 5 shows the practical approach of diabetic participants towards DM control by measuring blood pressure, eye examination and urine analysis was examined. 10% never check their blood pressure (BP), 47.9% did not have eye examination and 30.8% did not have urine test.

**Discussion :**

Research studies have shown that education in populations about diabetes resulted in a significant increase in knowledge about the disease . Early diagnosis and treatment of diabetes mellitus is important for limiting its adverse effects. It is important to know about the awareness level of this condition, as knowledge is a critical component of behavior change . In this study, both diabetic and non diabetic subjects, have good knowledge towards DM etiology and disease monitoring. But they have average knowledge towards DM management and physical control and low knowledge towards DM clinical manifestation and complication. Complications of DM have been found to set in long before clinical manifestation of the disease. It's reported that hypertension is associated with unrecognized diabetes , type 2 diabetes mellitus and fasting hyperglycemia. Education of people about DM symptoms, complication and risk problems associated with high BP is required. Diabetic participants have poor knowledge towards antidiabetic therapy they used regarding its name, utilization method and adherence. In fact DM is a chronic disease that requires ongoing monitoring and treatment. In addition diabetic subjects' adherence to their therapy is low; this will lead to complication of diabetes. In this study diabetic participants practice towards the management and control of DM is low. There are recommended diabetes care standards and guidelines that are used to guide patient health care team in recommending the management strategies that will help people to meet their glucose targets and to reduce the occurrence of diabetes complications . Hypoglycemic agents are usually used to maintain adequate glucose control . Over time, due to the progressive nature of Type 2 diabetes, a combination of oral agents is frequently necessary to maintain glucose control. In this study 34.2% of diabetic participants are unaware about hypoglycemic symptoms and 53.8% are unaware about the management of hypoglycemia, so education of people about management of hypoglycemia is required. Well-planned short education programmes are useful in improving knowledge and in creating enthusiasm to improve diabetes care and awareness. Control and prevention of diabetes requires a multidisciplinary and multisectorial integrated approach concentrating on a community and primary care approach. Education, lifestyle and behavior change are also vital elements of control and prevention . This study highlighted the need of people for better health information through large scale awareness interventions regarding diabetes mellitus. This may be achieved by using audio-visual aids, as well as posters showing patients with diabetes complications and their consequences such as lower limb amputation, blindness and renal dialysis; hypoglycemic symptoms after drug treatment such as weakness, confusion, and visual disturbances and how to control hypoglycemia. In addition diabetic patient adherence to their anti-diabetic therapy can be achieved through patient counseling by clinical pharmacist or health professional to improve diabetes care and can go a long way in the prevention and management of diabetes.

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