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# DIETARY AWARENESS IN DIABETIC PATIENTS AT AYUB TEACHING HOSPITAL (ATH)

**Dr Omar Sultan Khan, Dr Asad Khan, Dr Maryam Bibi**
Ayub Teaching Hospital, Abbottabad

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**Abstract:**
***Objective:*** *The prevalence of diabetes mellitus has risen exponentially over the last three decades, with resultant increase in morbidity and mortality mainly due to its complications. Aside from medical management of diabetes mellitus, diet also plays an important role in controlling diabetes and delaying the progression of diabetic complications. The current study aimed to access the dietary awareness among the diabetic patients admitted in Endocrinology unit of Ayub Teaching Hospital.*
***Materials and Methods:*** *This was a cross sectional study conducted at Ayub Teaching Hospital, Abbottabad from November, 2015 to August, 2016. Data was collected form 85 diabetic patients using a non-probability convenient sampling technique. Data was collected through preformed, structured questionnaire. Data was entered and analyzed by using SPSS version 20. Results were interpreted and conclusion was drawn out of it.*
***Results:*** *Out of 85 diabetic patients in the study, knowledge about role of diet in diabetes, 76.5% patients knew that proper and planned diet plays an important role in controlling diabetes and 23.5% patients did not have any knowledge/were not sure about role of planned diet in controlling diabetes.*
***Conclusion:*** *Diabetes mellitus is the most common non communicable disease of the modern world and it is on the rise in developing countries as well. In this study we concluded that public education about role of diet in diabetes had been reasonably successful in terms of passing on knowledge. However, it is not sure how strongly public education had encouraged people to adopt a different lifestyle and strictly follow the dietary plans to reduce the progress of diabetes.*
***KEYWORDS:*** *Diabetes Mellitus, Socio-demographic, Determinants, Ayub Teaching Hospital, Abbottabad.*

**Corresponding author:**
**Dr. Omar Sultan Khan,**
*Ayub Teaching Hospital, Abbottabad*

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## INTRODUCTION:

Diabetes is a chronic disorder with or without insulin resistance, associated with hyperglycemia which leads to microvascular and macrovascular complications [1,2,3]. Lack of awareness is posing severe burden on national health. It is necessary to have dietary awareness among patients otherwise it will lead to high prevalence [4]. This disorder occurs in both males and females, familiar in both rich and poor. The number of cases is expected to cross 300 million by 2025.Awareness among patients is necessary for control of disorder. Keeping in mind the risk factors for diabetes, dietary awareness can minimize the complications of disorder [5,6,7,8,9]. For the prevention of disorder, the patients should have appropriate awareness and knowledge of the disease, diet, complications and risk factors. According to the researches awareness among people played a vital role in early prevention of disease [9].Its prevalence is high in middle east countries but there is still lack of awareness and knowledge among patients which is contributing to increased risks [10,11]. Currently, limited programs are being held to educate public about dietary awareness and prevention. Despite of different educational programs to develop awareness among people, advances in treatment methods, improved efficiency of changed lifestyle, still people remain uninformed of the complications of this disease. Advances in diabetes treatment including new drugs are not often effectively communicated. In most of the cases, type-2 diabetes is often not accomplished properly. This results in lack of inspiration among people to change their lifestyles. The ideal health approach to bring awareness among public would emphasize on improving lifestyles, including physical exercise and develop healthy eating habits, increase awareness of complications and symptoms among health care provider and public, improve easy access of people with diabetes towards resources, monitor effect of diabetes through data collection[10].

Diabetes raises the economic burden of under developed countries like Pakistan, which only strengthen their risky and unhealthy life styles.

According to the International Diabetes Federation (IDF), Pakistan has the seventh largest population suffering from diabetes in the world, and will be on fourth number by year 2025. Incidence of death rate from diabetes alone is predictable to increase by 51% over next 10 years [12]. The prevalence of diabetes has increased in Pakistan to the extent of 12% of all people above the age of 25 have diabetes. According to BMI studies 37% of all male and 79% of all female diabetic patients were obese [13]. The diabetic community is unable to provide the facilities for monitoring and screening like blood sugar tests and urine analysis and knowledge of the drugs which are recommended healthy for people suffering from diabetes. As the literacy rate in Pakistan is low, in order to have successful campaigns to bring awareness among diabetic's media should play their role. Education programs regarding health issues should be ensured to promote healthy lifestyle, and emphasized on hazards of diabetes complications [14]. Across Asia, health professionals are also lack awareness, as they do not check patients BMI and do not record their height/weight. BMI is indicator of obesity which is major risk factor. There is urgent need for development of specialized clinics for diabetes management in these areas of Pakistan. Even family members of patient are also unaware of risk factors [15].

## MATERIALS and METHODS:

The design of this study was Descriptive cross-sectional study. This study was Endocrinology ward of Ayub Teaching Hospital, Abbottabad. The duration of this study was from 1st March to 31st August, 2016. Data was collected using a preformed, structured questionnaire. A total of 22 questions were asked from all patients. All patients were interviewed by the researchers themselves and questionnaire was elaborated to all patients in local language. They were asked to reply with either a Yes, No or Not sure/don't know to all the questions asked. A brief sample of their meals for a typical day was also taken. Data was entered and analyzed using statistical software of SPSS, 16.0. Frequencies and percentages were calculated for categorical variables like gender, marital status etc. Mean and standard deviation were calculated for quantitative variables like age etc. Data was presented as charts and tables for different variables.

## RESULTS:

The results of the study conducted to access the level of dietary awareness among the diabetic patients admitted in Endocrinology ward of Ayub Teaching Hospital, Abbottabad are presented in the form of tables and charts. 85 patients were included in our study. Mean age of was 48.74±16.262SD. Their ages ranged from 15 to 85 years.

**Table 1: Age of Patients**

| Variable | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age | 85 | 15 | 85 | 48.74 | 16.262 |

Results about gender of patients showed that, 44 (51.8%) diabetic patients were females and 41 (48.2%) were males.

**Table 2: Gender of Patients**

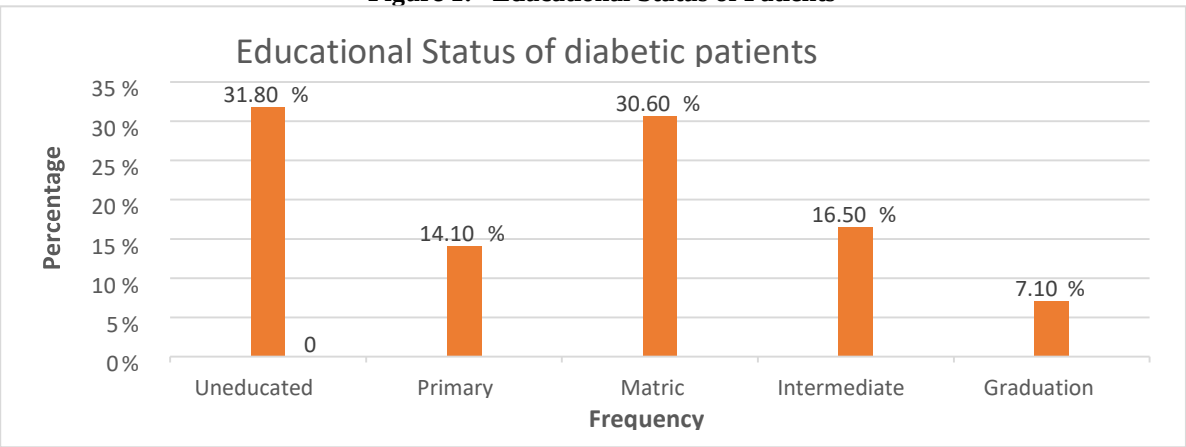
| Gender | Frequency | Percent |
|---|---|---|
| Male | 41 | 48.2 |
| Female | 44 | 51.8 |
| Total | 85 | 100.0 |

In our study out of total 85 patients, 49 patients were educated and 16 were uneducated

**Table 3: Educational level of Patients**

| Dietary Awareness | Uneducated | Educated |
|---|---|---|
| **Yes** | 16 | 49 |
| **No** | 11 | 9 |
| **TOTAL** | 27 | 58 |

**Figure 1: Educational Status of Patients**




In our study 27 (31.8%) patients were uneducated, 12 (14.1%) had education up to primary level, 26(30.6%) had up to Matric level, 14 (16.5%) had up to Intermediate level and 6 (7.1%) had educational status of Graduation. In our study, 74(87.1%) patients were married and 11(12.9%) patients were unmarried.

**Table 4: Marital Status of Patients**

| Marital Status | Frequency | Percent |
|---|---|---|
| Married | 74 | 87.1 |
| Unmarried | 11 | 12.9 |
| Total | 85 | 100.0 |

Body Mass Index (BMI) of patients was calculated by using height and weight of patients, according to which 3 (3.5%) patients were underweight, 30 (35.3%) patients had normal BMI, 27 (31.8%) were overweight and 25 (29.4%) were obese.

**Table 5: Body Mass Index (BMI) of Patients**

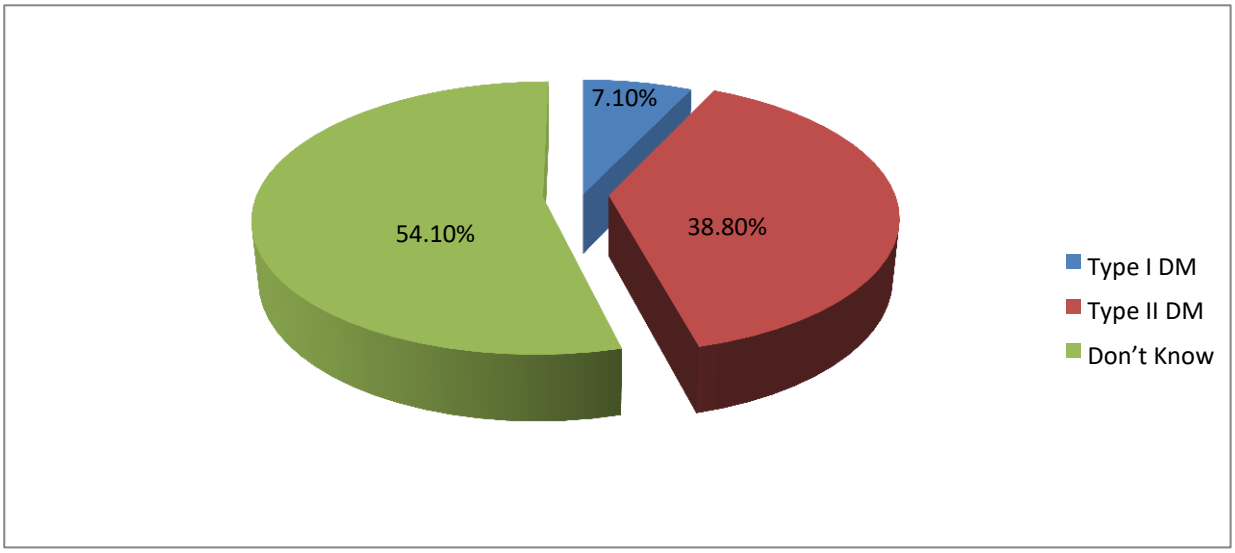
| BMI | Frequency | Percent |
|---|---|---|
| Under Weight | 3 | 3.5 |
| Normal | 30 | 35.3 |
| Over Weight | 27 | 31.8 |
| Obese | 25 | 29.4 |
| Total | 85 | 100.0 |

In our study, the patients who knew that proper and planned diet plays an important role in diabetes, 2 were underweight, 22 had normal BMI, 22 were overweight and 19 were obese. And the patients who did not knew that proper and planned diet plays an important role in diabetes 3 were underweight, 8 had normal BMI, 5 were overweight and 6 patients were obese.

**Table 6: Effect of Knowledge of Diet in Diabetes on BMI Group**

| Dietary Knowledge | BMI GROUP | | | | Total |
|---|---|---|---|---|---|
| | UNDER WEIGHT | NORMAL | OVER WEIGHT | OBESE | |
| YES | 2 | 22 | 22 | 19 | 65 |
| NO | 1 | 8 | 5 | 6 | 20 |
| TOTAL | 3 | 30 | 27 | 25 | 85 |

**Fig 2: Knowledge About Type of Diabetes from Which Patients Were Suffering From**




This pie chart explains that 7.10% of patients knew that they have Type 1 Diabetes Mellitus and 38.80% of patients knew that they have Type 2 Diabetes Mellitus. This means that a total of 45.90% (7.10% + 38.80%) of patients knew that which type of diabetes they have and 54.10% did not have any knowledge about the type of diabetes from which they are suffering from.

Regarding duration of diagnosis, 9(10.6%) patients were recently diagnosed as diabetic patients, 14(16.5%) had disease duration of less than 1 year, 12(14.1%) had a disease duration in between 1 to 3 years, 10(11.8%) had a duration in between 3 to 5 years, 19(22.4%) had duration in between 5 to 10 years and 21(24.7%) had a duration of disease more than 10 years.

**Table: 7 Duration of Diagnosis of Disease**

| | Frequency | Percent |
|---|---|---|
| Recently | 9 | 10.6 |
| Less than 1 year | 14 | 16.5 |
| 1 to 3 years | 12 | 14.1 |
| 3 to 5 years | 10 | 11.8 |
| 5 to 10 years | 19 | 22.4 |
| More than 10 years | 21 | 24.7 |
| Total | 85 | 100.0 |

In our study, out of 85 patients, 53(62.4%) were on insulin, 16(18.8%) were using oral anti-diabetics and 16(18.8%) were using both insulin and oral anti-diabetics

**Table: 8 Knowledge About Type of Medications Which Patients Were Taking in Diabetes**

| Type of Medication | Frequency | Percent |
|---|---|---|
| Insulin | 53 | 62.4 |
| Oral antidiabetics | 16 | 18.8 |
| Both | 16 | 18.8 |
| **Total** | **85** | **100.0** |

With respect to knowledge about role of diet in diabetes, as shown in table no 3, 65(76.5%) patients knew that proper and planned diet plays an important role in controlling diabetes and 20(23.5%) patients did not had any knowledge/were not sure about role of planned diet in controlling diabetes.

**Table: 9 Knowledge About Dietary Plan in Diabetes**

| Dietary Awareness | Frequency | Percent |
|---|---|---|
| Positive Response | 65 | 76.5 |
| Negative Response/Not sure/Don't know | 20 | 23.5 |
| **Total** | **85** | **100.0** |

Knowledge of patients about role of vegetables in controlling diabetes, 69(81.1%) patients knew that vegetables are very helpful in controlling diabetes while 16(18.9%) patients had not any knowledge/ were not sure about the role of vegetables in controlling diabetes.

**Table: 10 Knowledge About Role of Vegetables in Controlling Diabetes**

| Vegetables in controlling Diabetes | Frequency | Percent |
|---|---|---|
| Positive Response | 69 | 81.1 |
| Negative Response/Not sure/Don't know | 16 | 18.9 |
| **Total** | **85** | **100.0** |

Knowledge about the effect of fast foods on diabetes, 52(61.2%) patients knew that fast foods are harmful in diabetes while 33(38.8%) patients did not know/ were not sure that fast foods have a bad impact on diabetes.

**Table: 11 Knowledge About Bad Impact of Fast Foods on Diabetes**

| Role of fast foods in diabetes | Frequency | Percent |
|---|---|---|
| Positive Response | 52 | 61.2 |
| Negative Response/Not sure/Don't know | 33 | 38.8 |
| **Total** | **85** | **100.0** |

## DISCUSSION:

The current study was conducted in the Endocrinology Unit of Ayub Teaching Hospital, Abbottabad. This descriptive cross-sectional study was carried from 1st March to 31st July 2016. It was done on 85 patients in Ayub teaching hospital which is one of the largest of all the tertiary care hospitals in Khyber Pakhtunkhwa. Diabetes is a life-long disease marked by elevated levels of sugar in blood. It can be due to deficiency in production of insulin by pancreas or due to ineffectiveness of the insulin produced. It is known as a silent killer disease and is the second leading cause of visual and renal problems worldwide [16]. To improve the community wellbeing and thus decrease the economic burden of diabetes mellitus, it is essential to educate the population in general and diabetics in particular to help proper monitoring and management of this disease. In this study, a total of 85 diabetic patients, the ages of patients ranged from 15 to 85 years of age with the mean age of 48.74±16.262 years. Among them, 31.8% were uneducated while 14.10% had primary level of education, 30 .60% had done matriculation, 16.5% have intermediate level education and only 7.1% were graduated.

The current research revealed that prevalence of diabetes mellitus was more in females having a percentage of 51.8% as compared to males with a percentage of 48.2%. Another study conducted at Khyber Teaching Hospital; Peshawar also showed a high prevalence in females as compared to the male population [17]. The body mass index of patients

who participated in the study revealed that 3.5% patients were found underweight, 29.4% had a normal BMI, 31.8% were overweight and 35.3% were obese. This study coincided with a study done in Liverpool, United Kingdom where 86% of diabetic patients were reported overweight [18]. The difference in the two studies could be traced as a consequence of small samples size.

Our study concluded that, 76.5% patients had the knowledge of role of diet in diabetes while remaining 23 .5% had no awareness about diet role in diabetes. Another study conducted in Nigeria obtained same result where 88.5% were aware of dietary role in diabetes while 11.5% have no idea about diet in diabetes [19]. Out of 85 patients, total of13.2% patients were diagnosed with diabetes having less than 30 years of age, 63.5% patients having diabetes were of the age between 30 to 60 years. Above 60 years of age, 21.1 % of the patients were diagnosed with diabetes mellitus. Similarly, another study reported almost the same results where 8.8% patients diagnosed with diabetes had less than 30 years of age, 56.2% patients were in the age group of 30-60 years [20]. The response of patients about the adverse effects of fast foods on them, 61.2% were of the opinion that the diet had affected them while remaining 38.8% were unaware. Similar results were also reported from a study conducted in United States where 80% were having knowledge about adverse effects of fast foods on diabetes mellitus and remaining 20% were unaware [21]. The current study finds that 81.1% had the perception that vegetables are helpful to control diabetes mellitus while 18.9% were unaware about this fact. The same findings were in correlation with a previous study conducted in India [22].

## CONCLUSION:

Diabetes mellitus is the most common non communicable disease of the modern world and it is on the rise in developing countries as well. Disease itself and complications related to it have become a major problem in our community. In this study we concluded that public education about role of diet in diabetes had been reasonably successful in terms of passing on knowledge. However, it is not sure how strongly public education had encouraged people to adopt a different lifestyle and strictly follow the dietary plans to reduce the progress of diabetes. Future studies could look into this aspect. The mass media and the print media will continue to be important for dissemination of information. It is believed that the Internet will become an important source of healthcare information. The results of this study could contribute positively and meaningfully to the design of future educational programme and materials. An improved educational programme that tackles the areas of weaknesses or misconceptions can potentially increase the level of public awareness about role of diet in diabetes.

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