

# Awareness and Behavior Regarding Diabetes in Diabetic Patients and Their Glycemic Status at Tertiary Care Hospital

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## ABSTRACT

**Objective:** The objective of this study was to assess the awareness and behavior regarding diabetes in diabetic patients and to know their own glycemic status.

**Study Design:** Descriptive / cross-sectional study

**Place and Duration of Study:** This study was conducted at the Medicine Ward of LUMHS, Jamshoro during 1 year from 2014-2015.

**Materials and Methods:** Total 200 diabetic patients were selected for study. All cases after diagnosis of diabetes were included in study after taking informed consent while all other patients who were not diabetic were excluded. All the information was recorded on self designed proforma. Patients sugar level, blood pressure and BMI was checked. They were asked questions regarding awareness and behavior of diabetes, its sign and symptoms, complications and their glycemic status etc.

**Results:** When questions were asked from diabetic patients regarding behavior towards their disease than 60(30%) patients said that they had not changed their lifestyle because of diabetes while 54(27.5%) responded that they change their lifestyle sometimes. Diabetes was affecting the married life of couple in 72(36%) of cases, however it is not affecting in 71(35.5%) of cases. Regarding clinical aspect of the glycemic status of the patients in present study found as; HBA1c  $06.15 \pm 1.61$ , Random blood sugar of patients was  $120.15 \pm 4.61$  mg/dL.

**Conclusion:** It is concluded that patients showed poor knowledge regarding diabetes, and had not proper positive behavior regarding diabetes and glycemic status was not properly controlled.

**Key Words:** Diabetes, awareness, glycemic status

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## INTRODUCTION

Type II diabetes is the commonest chronic metabolic illness linked with significant premature morbidity and mortality requiring complete diagnosis, medical, proper treatment and positive lifestyle changes. Diabetes is one of the most usual disorders worldwide, the prevalence for which was estimated (globally), in 2013, 382 million people live with diabetes and this is expected to rise to 592 million by 2035. According to International Diabetes Federation, currently 6.6 million people live with diabetes in Pakistan, and in 2025 total quantity of diabetic population with diabetes is estimated to be 14.5 million; Pakistan has the eleventh largest population of diabetes<sup>1</sup>. Research has demonstrated that enhanced glycemic control diminishes the complication rate due to DM. Confirmed recommends that patients who are more aware regarding diabetes self-care might probably accomplish better glycemic control.

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Though education of diabetic patients essential diabetes control component, there remain instabilities with respect to the adequacy of various strategies and methods of training.<sup>2</sup> A review from Pakistan highlighted the way that an appropriate educational and awareness programs may change the behavior of general population about diabetes,<sup>3</sup> as the big gap amongst attitude and awareness among the diabetic patients.<sup>4</sup> Diabetes mellitus is associated with significant rates of morbidity and mortality due to micro and macro vascular complications<sup>5</sup>. As a result of associated complications, diabetes intensifies the economic burdens both on Health departments and patient itself in non-developed countries like Pakistan. Patient awareness about diabetes, complications, medications adherence, diet plans and life style modifications can establish patient specific goals, like effectiveness of medications.

It is confirmed that appropriate educational and awareness programs can change the attitude of the masses in regards to diabetes while tolerant instruction is the foundation to reduce diabetic complication and its treatment. Other than appropriate awareness and education, early diagnosis and good care can decrease the severity and complications of diabetes.<sup>6</sup> The aim behind this review was to evaluate the awareness and behavior of diabetic patients regarding diabetes and to

knew their own glycemic status at tertiary care hospital.

**MATERIALS AND METHODS**

This was a descriptive cross-sectional study and was carried out at medicine department and OPD of Liaquat University Hospital Hyderabad, within 1 year of duration from April 2014 to March 2015 on the known diabetic patients. Total 200 diabetic patients were included in the study. All the patients who were diagnosed as diabetics were included in the study after taking informed consent while all other patients who were not diabetic were excluded from the study. All the information was recorded on self-designed proforma. Patient's glycemic status, blood pressure and BMI were noted. A proforma was established and questions were included regarding awareness of diabetes, behavior to the diabetes and glycemic status etc. All the information was entered in the designed proforma and was analyzed in SPSS version 18.

**RESULTS**

Total 200 patients were included in the study. In this study, 67(33.5%) patients belonged to age group of <30 years, 89(44.5%) belonged to age group of 30-40 years and 44(22.0%) patients were in age group of >40 years. Table:1

56(28%) patients were illiterate, 61(30.5%) had received primary education, while 24(12%) were graduate. 67(33.5%) patients belonged to low socioeconomic class while 71(35.5%) belonged to middle class and 62(31%) belonged to upper class. Table:1

When questions were asked from diabetic patients regarding behavior towards their disease than 60(30.0%) patients said that they had not changed their lifestyle because of diabetes while 55(27.5%) responded that they change their lifestyle sometimes. 65(32.5%) patients find it difficult to discuss about their disease with their family so they never discuss about their disease while 60(30.0%) patients discuss sometimes and 75(37.5%) patients always share with family, friends and coworkers. Diabetes was affecting the daily performance at workplace in 83(41.5%)

patients while it affects sometimes in 69(34.5%) and it never affects performance in 48(24.0%) patients. Diabetes was affecting the married life of couples in 72(36.0%) of cases, however it is not affecting in 71(35.5%) of cases. due to diabetes, patients suffered from depression in 76(38.0%) patients while 55(27.5%) patients had never developed depression. 67(33.5%) patients always scared because of diabetes while 61(31.5%) patients never scared. Table:2

68(34%) patients knew about correct method of diagnosing diabetes while only 71(35.5%) patients knew that high blood pressure can worsen the diabetes. Only 65(32.5%) patients knew that after diabetes, patient needs life style modification. 121(60.5%) patients knew what is diabetes but only 58(29%) answered correctly about sign and symptoms of diabetes. 61(31.5%) patients knew about complications of diabetes. 159(79.5%) patients were un aware about etiology of diabetes and 158(79%) patients did not know that regular exercise is helpful in diabetic patients. Table:3

Regarding clinical aspect of the glycemic status of the patients in present study found as; HBA1c 06.15 ± 1.61, Random blood sugar of patients was 129.15 ± 4.61 mg/dL. BMI was found to be 32.24 ± 4.13Kg/m<sup>2</sup> while systolic BP was 139 ± 4.43 mmHg and diastolic BP was 87 ± 4.31 mmHg. Table:4

**Table No.1: Demographic characteristics of the Patients (N=200)**

| Characteristics             | Frequency/(%) |
|-----------------------------|---------------|
| <b>Age groups</b>           |               |
| < 30 year                   | 67(33.5%)     |
| 30-40 year                  | 89(44.5%)     |
| >40 year                    | 44(22.0%)     |
| <b>Educational Status</b>   |               |
| Illiterate                  | 56(28.0%)     |
| Primary                     | 61(30.5%)     |
| Secondary                   | 59(29.5%)     |
| Graduate                    | 24(12.0%)     |
| <b>Socioeconomic Status</b> |               |
| Low Sec                     | 67(33.5%)     |
| Middle class                | 71(35.5%)     |
| Upper class                 | 62(31.0%)     |

**Table No.2: patients behavior towards their Disease n=200**

| Behavior   | Never      | Sometimes  | Always    |
|--|------------|------------|-----------|
| Has your lifestyle changed because of diabetes?  | 60 (30.0%) | 55 (27.5%) | 85(42.5%) |
| Do you find it difficult to discuss about diabetes with your family, friends and co-workers? | 65 (32.5%) | 60(30.0%)  | 75(37.5%) |
| Has diabetes affected your Performance at your workplace?                                    | 48(24.0%)  | 69(34.5%)  | 83(41.5%) |
| Does diabetes have an adverse effect on your married life?                                   | 71(35.5%)  | 57(28.5%)  | 72(36.0%) |
| Have you ever gone through depression ever since you were diagnosed diabetic                 | 55(27.5%)  | 69(34.5%)  | 76(38.0%) |
| Are you scared from diabetes?  | 61(31.5%)  | 72(36.0%)  | 67(33.5%) |
| Does your employer/co-workers see you as a liability?  | 63(31.5%)  | 68(34.0%)  | 69(34.5%) |

**Table No.3: Awareness about diabetes n=200**

| Questions  | Yes        | No         |
|--|------------|------------|
| Do you know about accurate method of monitoring diabetes?          | 68(34%)    | 132(66%)   |
| In a diabetic patient, high blood pressure can increase or worsen? | 71(35.5%)  | 129(64.5%) |
| Lifestyle modification is needed for diabetic patients?            | 65(32.5%)  | 135(67.5%) |
| What is diabetes?  | 121(60.5%) | 79(39.5%)  |
| Do you know about sign and symptoms?                               | 58(29.0%)  | 142(71.0%) |
| Do you know about dietary management?                              | 61(31.5%)  | 139(69.5%) |
| Do you know about diabetic complications?                          | 55(27.5%)  | 195(97.5%) |
| Do you know about diabetic etiology?                               | 41(20.5%)  | 159(79.5%) |
| Do you know regular exercise is very important during diabetes?    | 42(21.0%)  | 158(79.0%) |

**Table No.4. Clinical aspects of diabetic patients n=200**

| Clinical Aspects           | Mean $\pm$ SD                     |
|----------------------------|-----------------------------------|
| HBA1c                      | 06.15 $\pm$ 1. 61 mg/dL           |
| FBS                        | 108.24 $\pm$ 4.13 mg/dL           |
| Random Blood glucose level | 129.15 $\pm$ 4. 61 mg/dL          |
| BMI                        | 32.24 $\pm$ 4.13Kg/m <sup>2</sup> |
| systolic BP                | 139 $\pm$ 4.43 mmHg               |
| diastolic BP               | 87 $\pm$ 4.31 mmHg                |

## DISCUSSION

Diabetes type II is preventable disease by making positive behavior and proper exercise activities. Awareness methods can be used to improve the outcomes of diabetes.<sup>7</sup> In our study 30% patients said that they had not changed their lifestyle because of diabetes while 27.5% responded that they change their lifestyle sometimes. 32.5% patients find it difficult to discuss about their disease with their family so they never discuss about their disease while 30% patients discuss sometimes and 37.5% patients always share with family, friends and co-workers. Diabetes was affecting the daily performance at workplace in 41.5% patients while it affects sometimes in 31.5% and it never affects performance in 24% patients. Diabetes was affecting the married life of couples in 36% of cases, however it is not affecting in 35.5% of cases. Due to diabetes, patients suffered from depression in 38% patients while 27.5% patients had never developed depression. 33.5% patients always scared because of diabetes while 31.5% patients never scared.

Similar results are seen in the study conducted by Javeed A<sup>8</sup>. (author) in which 25% patients never changed their life style, 25% patients never discuss their disease with their friends or family members and only 30% patients share their disease with their family members. In 15% of patients diabetes affected their performance at workplace while in 40% patients it was not affecting their performance. 27.5% patients had always depression due to diabetes. The greater part of the general population who create diabetes in the creating nation have a place with working age groups in this way inter association of illness influencing their

work and work influencing the illness consequently is a critical aspect for them.<sup>9</sup> There is proof of the negative effect of diabetes on the capacity to work, subsequently making an expansion in prevalence for society.<sup>10</sup> It is demonstrated that there is a relationship amongst depression and the occurrence of diabetes type II with an inconsequential association amongst diabetes and risk for depression.<sup>11</sup> It has additionally been demonstrated that there is an expanded risk of having another depressive assault in individuals with DM when contrasted with normal cases and this risk of depressive may increase for those cases having complicated diabetes.<sup>12</sup> Though the risk of psychosocial stress is more common in patients with DM.<sup>13</sup> In our study, 34% patients knew about correct method of diagnosing diabetes. Only 32.5% patients knew that after diabetes, patient needs life style modification. 60.5% patients knew what is diabetes but only 29% answered correctly about sign and symptoms of diabetes. 31.5% patients knew about complications of diabetes. Pardhan et al.<sup>18</sup> demonstrated that a significant little knowledge regarding DM and its complications, to prevent its complications and appropriate dietary practices optimal diabetes management are needed and patient's awareness and good behavior may decrease the burden diabetic complications.

In this study 79.5% patients were unaware about etiology of diabetes and 79% patients did not know that regular exercise is helpful in diabetic patients. Similar results are seen in the study conducted by Upadhyay DK et al,<sup>14</sup> whose results also showed that only 58.24% patients were aware about accurate method of controlling of diabetes and only 25.82% patient knew that life style modification is necessary after diabetes while very few patients i.e. 8.79% patients had knowledge that exercise is helpful in diabetic patients. Another study conducted by Rehman U had similar results.<sup>15</sup>

Regarding clinical aspect of diabetic patients in present study was, mean random blood sugar of patients was 129.15  $\pm$  4. 61 mg/dL which was higher than normal range. And mean of HBA1c level was 06.15  $\pm$  1. 61 mg/dL. Similar results are seen in the study conducted by Rajul D et al.<sup>16</sup> whose results showed that mean RBS was 126.12 $\pm$ 3.57 mg/dL, mean BMI was

30.49±5.23 kg/m<sup>2</sup>, mean systolic BP was 143±5.58 mmHg and mean diastolic BP was 89±5.13mmHg. For the management of diabetes, patients need positive change in their behavior along with proper medication medications. Majority of the diabetic patients preferred fast food, soft drinks, and mayonnaise as they considered them healthy food. Such eating preferences result in the development of obesity among patients and evidence suggests that prevention intake of fat and the sugar to prevent the obesity,<sup>17</sup> which can lead diabetic complication.

## CONCLUSION

It is concluded that patients showed poor knowledge regarding diabetes, and had not proper positive behavior regarding and glycemic status was not properly controlled. Awareness program should be performed regarding diabetes, and diabetic control clinics should be developed in all general populations' areas.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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