Survey on problems faced by dental patients having diabetes mellitus

Running title: To assess the problems faced by dental patients having diabetes mellitus

Abstract

Introduction

The objective of this study is to investigate that patients having diabetes mellitus face more problems in a dental clinic or hospital. Oral care provided by dentists in these patients play an important role.

Materials and method

The survey was conducted through an online platform, results were evaluated using SPSS software. Responses of these questionnaires were analysed using SPSS statistics. Crosstabs with Monte Carlo and confidence level 95% was used. Statistical significance was then analysed.

Results

Results and data after analysis showed that many problems are faced by dental patients with diabetes mellitus.

The main reason for this survey is to know whether people are aware about the problems faced by dental patients having diabetes mellitus and to make people aware about that.

Conclusion

The present study thus concluded that patients who are having diabetes mellitus must follow the clinicians suggestions to control the blood sugar level and cooperate with the practitioners for the safest procedures.

Keywords: diabetes mellitus, dentistry, type 1,type 2 diabetes

Introduction

Diabetes mellitus is not simple but it is a pernicious syndrome.(1) It is one of the most chronic diseases of our time.(2) The most common is type 2 diabetes (3,4) around 5% is of type one diabetes and others of type among primary cases (5–7). There is no particular treatment to cure diabetes.(8) It is a common endocrine problem and many people are affected.(9) Lack of proper diagnosis leads to many other problems like infection, delayed healing, neuropathy, atherosclerotic aneurysms, myocardial infarction and amputation (10,11). Increase in blood glucose level that is hyperglycemia is one of its complications and add more seen in patients with type 1 diabetes mellitus.(12,13) Patients with diabetes mellitus are prone to oral infections.(14)

There are some therapeutic regimes (15) are there.(16) Hypoglycaemia is related with oral problems(17,18) like gingivitis, xerostomia, periodontal diseases(19), dysfunction of salivary gland, candidiasis,(20) abscesses in Periapical region, inability to wear dentures in old age people, loss of taste (21,22). Periodontal disease in them is also known as "sixth complication of diabetes mellitus" and is mostly seen in the patients (23,24). Many studies have demonstrated that patients with type 1 diabetes and chronic,(25) marginal metabolic control of the disease are more prone to this.(26) In these patients as a result of micro vascular changes leads to late tissue healing which affects the patient(27). Prevalence of diabetes is related to age as the age increases in most of the cases diabetes chances also increases(28).

Materials and method

The survey was conducted among 150 people in an online platform through Google forms with verified questionnaire and was circulated.

Questionnaire had following questions-

1)Are dental patients with diabetes mellitus affected more during treatment? Yes or No

2)Is wound healing delayed in these patients? Yes or No

3)Tooth extraction in patients with diabetes mellitus has to be done with extra care. Yes or No

4)Do you agree with the fact that old age people with diabetes are more affected by dental treatments? Yes or No

5)Some people approaching the dentist are unaware of their diabetic status. Yes or No

6) Some patients become hypoglycemic while undergoing treatment. Yes or No

7) Previous medical history plays an important role. Yes or No

8)In case of high blood sugar condition tooth extraction is avoided among dental patients. Yes or No

9)People affected with diabetes mellitus are more susceptible to oral infections. Yes or No

10)The dentist had to get the patient's blood test done before tooth extraction. Yes or No

Statistical analysis

The responses of these questionnaires were analysed using SPSS statistics. Crosstabs with Monte Carlo and confidence level 95% was used. Statistical significance was then analysed.

Results

The present study has observed the following finding which is there in the graph and legends. The results were analysed using the SPSS software crosstabs with Monte Carlo and confidence level 95% was used. Statistical significance was then analysed.

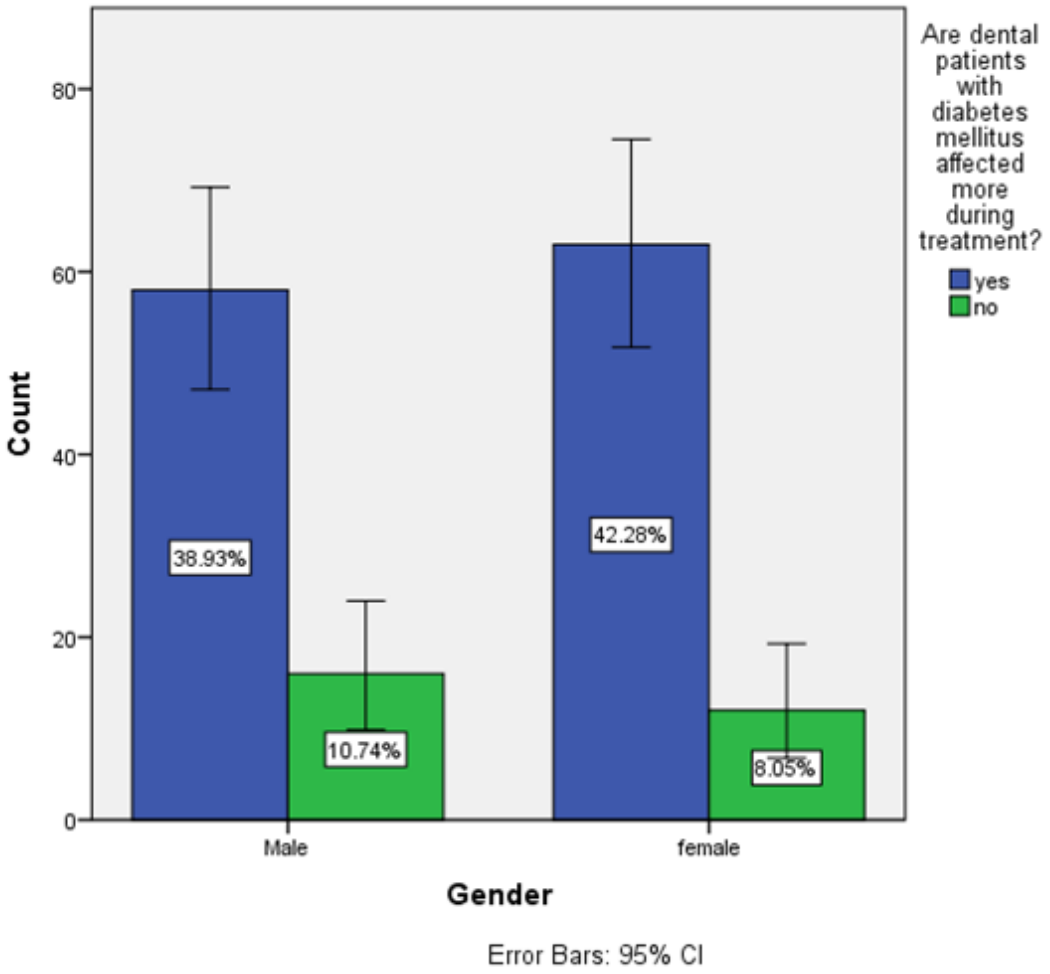

FIGURE 1 : Bar graph depicts comparison between gender and the question about dental patients with diabetes are more affected X axis represents the gender and the Y axis represents the people with a response of agree or disagree. Blue colour represents yes, green represents no and yellow represents the fact that dental patients with diabetes are more affected. Most of the answers were from Males with a percentage of 38.93% and females about 42.28% agree with this fact.

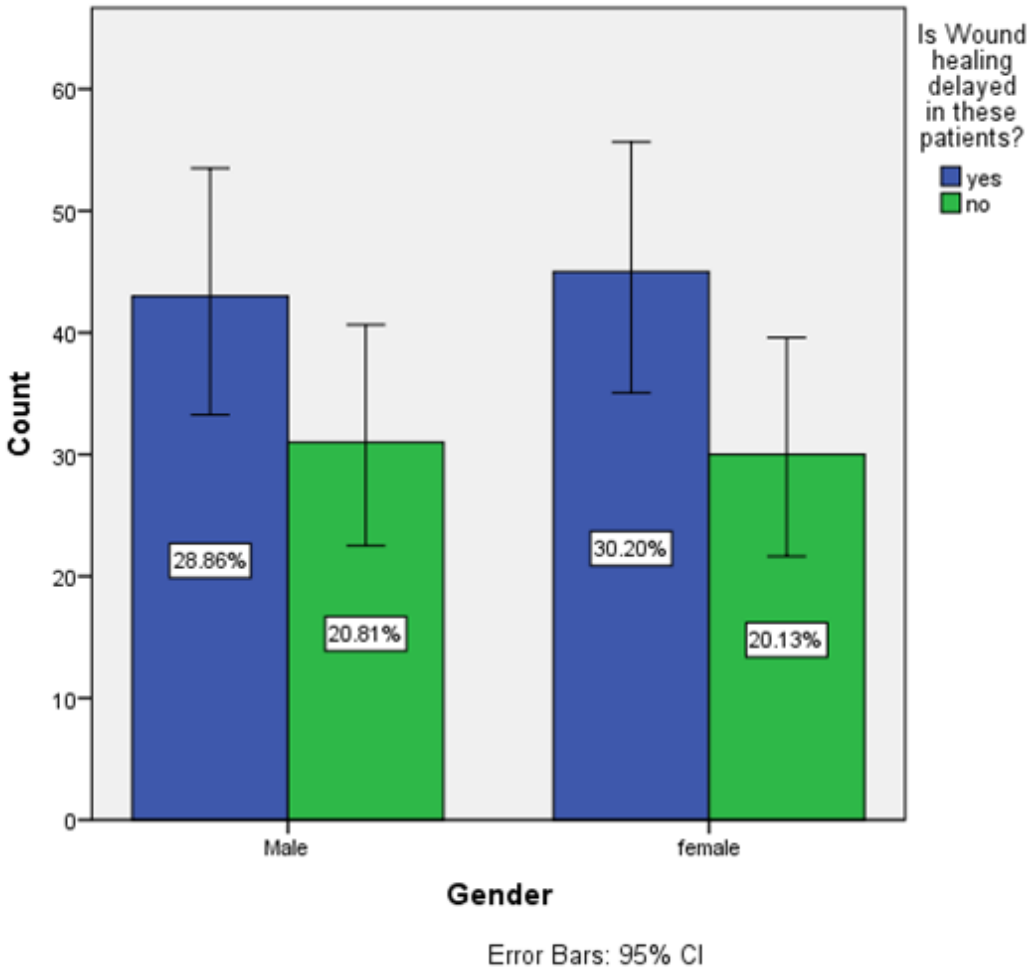

FIGURE 2 : Bar graph depicts comparison between gender and the question about delayed wound healing in diabetic patients. The X axis represents the age and the Y axis represents the people with a response of agree or disagree. Blue colour represents yes, green represents no about the fact that wound healing is delayed in diabetic patients is agreed by 28.86% of males and 30.20% of females

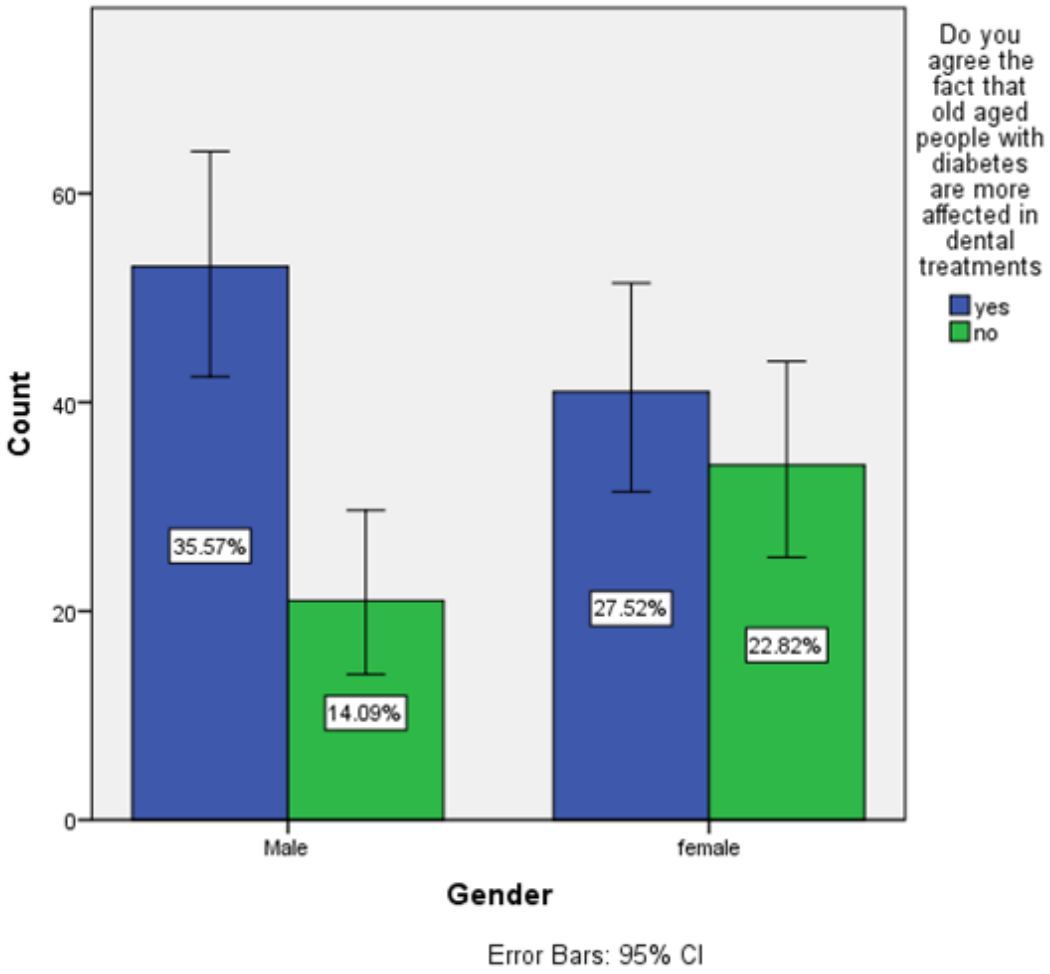

FIGURE 3: Bar graph depicts comparison between gender and the question about old aged people are more affected. The X axis represents the age and the Y axis represents the people with a response of agree or disagree. Blue represents yes, green represents no. Majority 35.57% of males and 27.52% females agree to the fact.

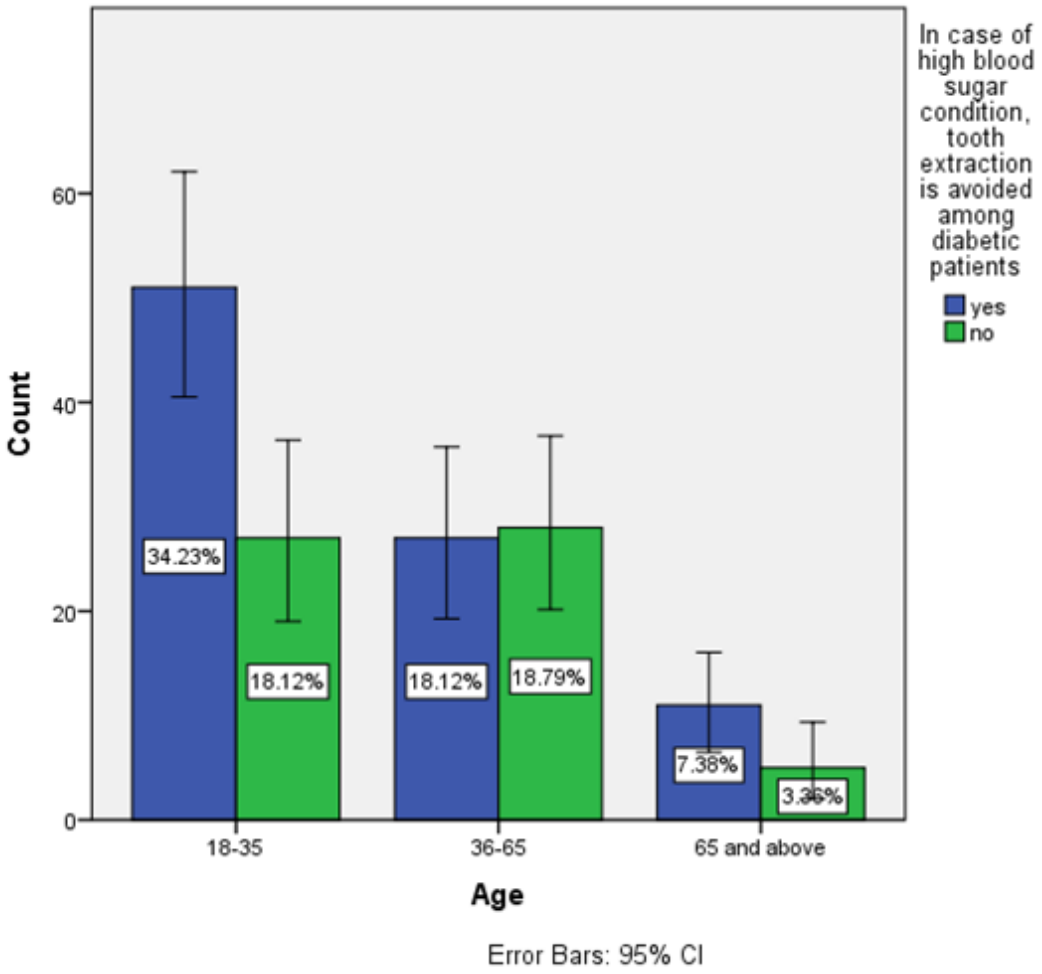

FIGURE 4: Bar graph depicts comparison between age and the question about the fact that in case of high blood sugar tooth extraction is avoided. The X axis represents the age and the Y axis represents the people with a response of agree or disagree. Blue represents yes, green represents no. Majority of the answers from the age group of 18-35 about 34.23% were yes.

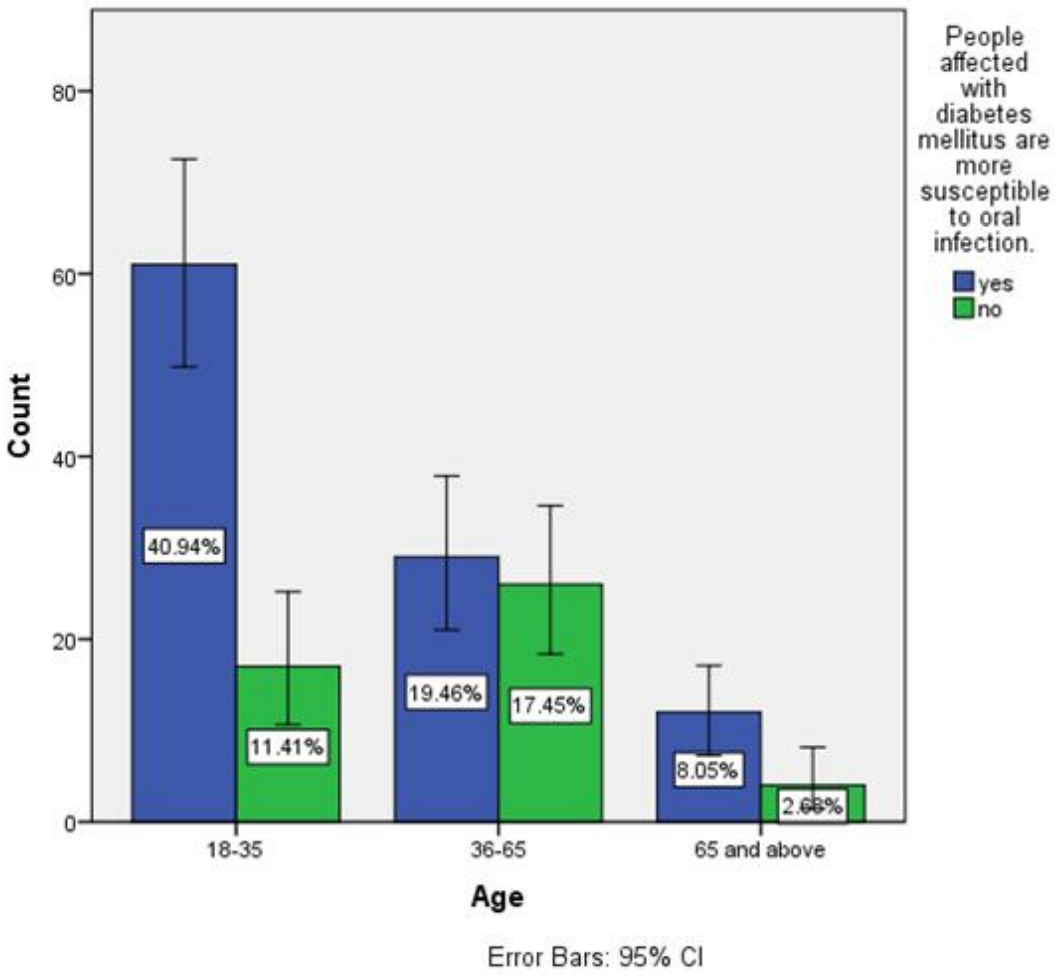

FIGURE 5: Bar graph depicts comparison between age and the question about the fact that. Diabetic patients are more susceptible to oral infection. The X axis represents the age and the Y axis represents the people with a response of agree or disagree. Blue represents yes, green represents no. Majority of the answers from the age group of 18-35 about 40.94% were yes.

Discussion

The present study is aligned to check the problems faced by dental patients with diabetes mellitus (Figure 1-5). Early diagnosis of diabetes reduces the related problems(29) Diabetes mellitus is one of the most chronic diseases of our time. Type 2 diabetes is common, but is unrecognized for many years.Diabetes leads to oral complications(30). Dentists can reduce the morbidity, mortality associated with diabetes by maintaining the patient's oral health and preventing many oral diseases. The dentist can help in preventing any kind of oral infection in

patients with diabetes. In case of periodontitis tetracyclines can function as inhibitors. The treatment of the insulin-dependent diabetic requires additional attention.

The oral problems in patients with uncontrolled diabetes are also mostly shown by excessive loss of fluids through excessive urination (polyuria), change in response during infection, microvascular changes, high glucose levels in saliva. Incline in rate of dental caries may occur in young diabetic patients; proportional to reduced salivary flow. Apart from treatments change in metabolic control of the diabetes may decrease further increase.Improvement in glycemic control majorly affects complications such as xerostomia and candidiasis.(31)

A diabetic patient whose glucose levels are controlled generally has no need for antibiotics post surgical procedures(32). However, the intake of antibiotics during the postsurgical phase is apt , if there is some infection, pain, and or any related stress(33).

The glycated or glycosylated hemoglobin test (HbA1c) is majorly used to check glycemic control.Hemoglobin is a marker to measure the glucose pool.So , it is the preferred test for the medical evaluation of diabetes as it measures the blood glucose levels over a period of 8 to 12 weeks.Exogenously insulin is injected into subcutaneous layer of skin. Improvement in glycemic control has a major role in reducing the occurrence of complications such as xerostomia and candidiasis. The limit of the study was that it was cross sectional study. In future more analyses can improve the treatment plans of dental patients with diabetes mellitus.

Conclusion

It is well known that diabetes mellitus is a metabolic disorder that occurs due to ageing, genetic predisposition etc,. It has its own detrimental effects on the body if it is not controlled properly by taking medicines and changing lifestyle. As mentioned, it may also affect oral health and it is important to know the patient history of those who are having diabetes by dentists. As age advances the healing of the wound is delayed and it may lead to secondary complications as well. Thus the present study concluded that patients who are having diabetes mellitus must follow the clinicians suggestions to control the blood sugar level and cooperate with the practitioners for the safest procedures.

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