



## Need for Diabetic Screening in a Periodontal Set Up

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**INTRODUCTION:** Periodontitis has been proved to be linked deeply with the chronic ailment diabetes. Research data shows that their relationship is direct and bifacial. The prevalence of both these diseases is on the rise but still there is a scarcity of diabetic screening in periodontal set-ups.

**AIM:** To lay emphasis on the need of diabetic screening in a periodontal set-up

**MATERIAL AND METHODS:** An observational, cross-sectional study with an initial sample size of 200 patients was conducted. Periodontitis was evaluated with the CPI index and RBS was measured using a blood glucometer.

**RESULTS:** Significant difference in the periodontitis patients who were aware and unaware of their diabetic status.

**CONCLUSION:** Screening for diabetes in a periodontal clinic is conducive to the creation of awareness and early detection and treatment of such a chronic disease and can help avoid the setting in of related complications by giving the patient a chance to initiate an early intervention.

**KEYWORDS:** Periodontitis, Diabetes Mellitus, Blood Glucose

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### INTRODUCTION

Diabetes and periodontitis are diseases, chronic in nature and both possessing immuno-inflammatory components. It is an established fact now that both of the afore mentioned diseases are related in more than one way and share a bifacial relationship. The status of one may affect the other and vice-versa.<sup>1,2</sup> There are a sea of researches that suggest an oral health or a periodontal screening for diabetic patients and this study was undertaken to lay emphasis on the importance of diabetic screening in a periodontal setup. The aim of the study was to assess the importance of diabetic screening in a periodontal setup.

### MATERIALS AND METHODS

The study is a cross-sectional, non-interventional and observational study. A total of 150 patients taken from the OPD Department of Periodontics of Panineeya Dental College comprised the sample of the study. The ADA criteria was used to classify diabetes.<sup>3,4</sup> Any patient with an RBS of  $\geq 200$ mg/dl was considered diabetic and counselled to go for a confirmatory test. The Community Periodontal Index(CPI) was used to classify periodontitis. The inclusion criteria was patients with age  $>25$  years, diagnosed with chronic severe periodontitis and willing to participate in the study. The exclusion criteria included the patients not willing to

participate in the study, and, pregnant and lactating women.

150 patients with severe periodontitis ( $LOA \geq 1$ ) were selected and screened for diabetes with random blood sugar, measured by a blood glucose meter. Patients with a reading  $<200$ mg/dl were suggested to get blood sugar tested periodically and sent for a periodontal treatment and those with  $RBS \geq 200$ mg/dl were enquired if they knew about their diabetic status. The patients who knew they had diabetes were counselled to keep their blood sugar under check and special emphasis was laid on periodontal health counselling and then were sent for a periodontal treatment. The patients who were unaware of their diabetic status were counselled to further get a confirmatory test for diabetes done and were explained the importance of maintaining periodontal health and keeping their diabetic status in check and then were sent for a thorough periodontal treatment.

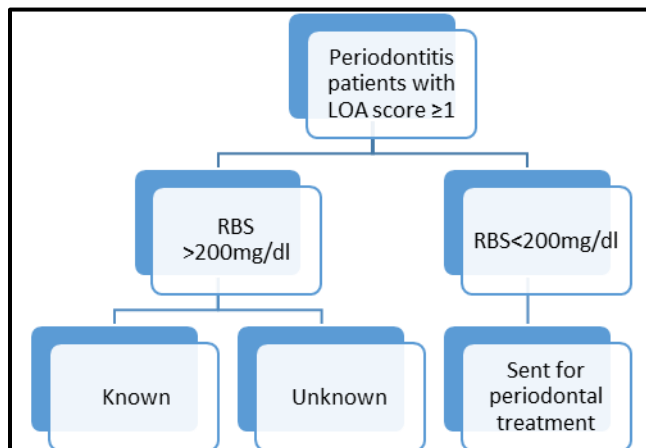
The procedure is explained in figure 1.

### RESULTS

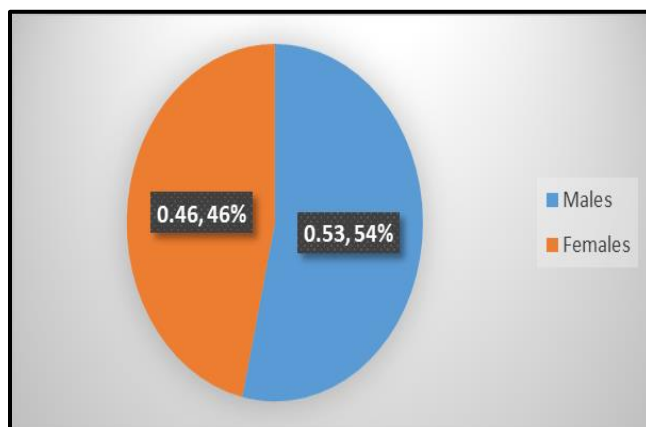
A total of 200 patients were screened, out of which 180 patients met the inclusion criteria. 30 patients did not



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**Figure 1.** Procedure and Study Design



**Figure 2.** Demographic Data of the Study Population

turn up for the diabetic screening and were excluded from the study, finally, 150 patients were evaluated. 34 patients had an RBS of <200 mg/dl out of which 16 were males and 18 were females, and 116 patients had an RBS ≥ 200mg/dl out of which 64 were males and 52 were females(Table 1).

	RBS<200	RBS>200
MALES	16	64
FEMALES	18	52

**Table 1.** Demonstrating Number of Males and Females with RBS More or Less Than 200

Thirty-one patients out of 116 knew about their diabetic status of which 15 were females and 16 were males. 85 patients did not know about their diabetic status (males-48; females-37). There was a statistically significant difference(p=0.003) between the periodontal patients who knew and those who did not know they had diabetes. When gender wise comparison was done 56.4% of males did knew there diabetic status when compared to females (43.6%) but there was no significant gender predilection detected (Table 2).

	KNOWN DIABETIC STATUS	UNKNOWN DIABETIC STATUS	TOTAL	P VALUE
MALES	16(51.6%)	48(56.4%)	64	<b>0.0033</b>
FEMALES	15(48.4%)	37(43.6%)	52	
Total	31(100%)	85(100%)		

**Table 2.** Demonstrating Diabetic Status Of Patients With RBS Value More Than 200

### DISCUSSION

This study was carried out to emphasize the need of screening for diabetes in a periodontal set-up. This serves two major purposes, first one being that the clinicians gets an idea about the diabetic status of the patient, according to which they could modify their treatment plans and take necessary care required for such patients and secondly, it could serve as a flag-point for the patients to know about the possibility of having diabetes and taking an early step ahead for preventing its severity and avoid complications with timely treatment. This practise is especially helpful in developing countries like India where diabetes is on a rise<sup>1</sup> and periodontitis being a widespread disease brings a lot majority of people to the periodontists. Periodontitis and Diabetes share a lot of common risk factors and are interrelated which makes the diabetic screening in a periodontal setup even more necessary and appropriate. Loe et al. in 1993, described periodontitis as the “sixth complication of diabetes”<sup>2</sup> and in 2003 the American Diabetic association recognized the importance of the two-way relation between diabetes and periodontitis.<sup>4</sup> According to a study conducted by Rosedale et al., the patients visiting periodontists and the clinicians themselves consider the dental visit as a good opportunity for diabetic screening.<sup>5</sup> The NHANES data published in 2019 concluded that the screening for diabetes and

prediabetes during dental visits had a potential to make about 22.36 million adult patients aware of the risk they carry for the disease.<sup>6</sup> The present study points to similar conclusions. Diabetes and periodontitis have shared the lime-light for a over a decade now, for the relation they share. A poorly controlled diabetic status alters the immune status of an individual to a level that a vulnerability of developing other diseases may occur. The inflammatory and the immune components show a more destructive profile with altered secretions of various cytokines, altered immune-cell functions, increase in the reactive oxygen species and production of advanced glycation end products (AGEs). All of these in-turn increase the severity of periodontal diseases which are majorly an immuno-inflammatory disease. Also, the complications that follow an uncontrolled diabetes, may make the performing of various periodontal procedures difficult and special precautions have to be taken.<sup>5</sup>

Various studies also suggest that patients with severe periodontal disease which has not been treated show a poorer diabetic status than the ones who are treated.<sup>7,8</sup> The present study points to similar conclusions.

## CONCLUSION

Screening for diabetes in a periodontal clinic is conducive to the creation of awareness and early detection and treatment of such a chronic disease and can help avoid the setting in of related complications by giving the patient a chance to initiate an early intervention.

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