



DIABETES MELLITUS PATIENTS; IMMEDIATE DENTURES

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Article received on:

28/03/2015

Accepted for publication:

02/10/2015

Received after proof reading:

13/11/2015

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ABSTRACT... Objectives: To observe Quality of Life (QoL) in diabetes mellitus patients after fabrication of immediate dentures. **Setting:** Department of Prosthodontics in Hamdard University Dental Hospital, Karachi. **Period:** Two years from October 2011 to September 2013. **Methodology:** Thirty patients with established diagnoses of diabetes mellitus reported. In this study by purposive non-probability sampling technique. In this study patients were selected, male and female patients were 24 and 6 respectively with the age range of 22- 74 years. After getting consent Questions mention in OHIP-14 were asked from the patients on 1st visit and 2 months later after fabrication of immediate denture to assess the QoL of in these patients. Data was obtained after using SPSS-version 19. For analysis Wilcoxon Signed Ranks Test was applied to get results. Probability level of $P \leq 0.05$ was considered statistically significant. **Results:** There was marked improvement in different domains of QoL in diabetes mellitus patients after fabrication of immediate dentures, most of the patients were pleased with their prosthesis. Three patients had complained of pain on buccal side which was corrected by trimming the overextended flange of their denture. All patients had improvement in phonetics (P value 0.01), better choice of food (P value 0.00), eating ability (P value 0.01), decrease embarrassment (P value 0.08) and self-assurance (P value 0.025). However, effect of immediate denture on variable like tension was not advantageous having P-value of 0.157. **Conclusion:** By fabrication of immediate dentures to diabetes mellitus patients, QoL can be markedly improved in such patients.

Key words: Diabetes, Immediate Dentures, Quality of Life, Prosthodontist

Article Citation: Hussain M, Ali SA, Hassan SI, Yazdanie N, Khan MY, Khan M. Diabetes mellitus patients; immediate dentures. Professional Med J 2015;22(11):1409-1414. DOI: 10.17957/TPMJ/15.2870

INTRODUCTION

Diabetes Mellitus is a clinical syndrome due to absolute or relative deficiency of insulin. Diabetes mellitus is emerging as an epidemic all over the world.¹ Its prevalence is increasing day by day. The World Health Organization (WHO) predicts that the global prevalence of diabetes will increase from 135 million to 300 million in 2025.² Pakistan ranks sixth among countries of the entire world regarding prevalence of diabetes mellitus.³

Diabetes causes various complications in the body including compromise oral health as well. Oral health disorders include periodontitis, caries, xerostomia, oral ulcers, burning mouth syndrome, and candidiasis, loss of resilience of oral mucosa, residual bone resorption, periodontal abscess, gingival overgrowth and poor compli-

ance to dental prosthesis.⁴

These oral complications are most likely due to increase glucose concentration in saliva, impaired host resistance due to defective function of polymorph nuclear leucocyte (PMN) and microvascular changes and dehydration due to polyuria.⁵

A close association exists between periodontitis and diabetes which can have a reciprocal influence on each other. This two-way relationship is based on the fact that one condition modifies the systemic and local environments which favor the progress of the other.⁶

If timely management is not provided for periodontitis then it will further aggravate the situation resulting in loss of teeth. This will further deterio-

rate the oral health and as a result esthetics and functions like mastication and speech will be further compromised.⁷

Multiple approaches are required for oral rehabilitation of diabetic patients. Provision of immediate dentures can be one of the valuable remedy for such patients. Immediate dentures may be either conventional or interim immediate dentures. It can also serve as a transitional denture and can be successfully converted into a complete denture later on in situations where the existing dentition is of poor prognosis and extraction of all the teeth is required.⁸

There are numerous advantages of immediate dentures like, improve esthetics, and diminish bone resorption, maintenance of lower facial height, protection of tooth sockets, better oral functions, and duplication of natural teeth shape, form and position by artificial teeth

Along with improve psychological health of these patients. It also has few disadvantages like inability to perform tooth try in, increase cost and number of visits as well.⁹

Selection of patients is an important prerequisite for success of immediate denture which can be accomplished with proper history, examination and treatment planning. If extraction is required in both anterior and posterior region then it is better to perform extraction in posterior segment followed by extraction in anterior region and also if immediate denture is required for both jaws then immediate dentures for both arches can be fabricated simultaneously.¹⁰

By provision of immediate dentures in diabetic there is marked improvement in Quality of life (QoL) which is defined as the individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.¹¹

There are various domains to determine QoL. Various questionnaires like OHIP- 14, OHIP-

Edent, and Geriatric Oral Health Assessment can be used to evaluate QoL in patients with loss of teeth. These questionnaires can serve as a useful tool to observe changes in QoL for such patients.¹²

These questionnaires can be of great help to determine the various important factors which can influence the QoL. These questionnaires provide information relating negative influence of oral disorders on QoL as well.¹³

Oral health related quality of life (OHRQoL) has strong influence on clinical practice of dentistry and dental research. OHRQoL is a multidimensional construct that includes a subjective evaluation of the individual's oral health, functional well-being, emotional well-being, expectations and satisfaction with care, and sense of self. OHRQoL is an integral part of general health and well-being. It is also recognized by the World Health Organization (WHO) as an important segment of the Global Oral Health Program.¹⁴

METHODOLOGY

Thirty patients with established diagnoses of diabetes mellitus reported to the Department of Prosthodontics in Hamdard University Dental Hospital, Karachi were included in this study by purposive non-probability sampling technique. Among selected patients, male and female patients were 24 and 6 respectively with the age range of 22- 74 years. The duration of the study was of two years from October 2011 to September 2013. After getting consent Questions mention in OHIP-14 were asked from the patients on 1st visit before provision of prosthesis and 2 months later after fabrication of immediate denture to assess the QoL of in these patients. Data was obtained after using SPSS-version 19. For analysis Wilcoxon Signed Ranks Test was applied to get results. Probability level of $P \leq 0.05$ was considered statistically significant.

RESULTS

Thirty patients were selected. Out of which twenty two patients were provided with maxillary dentures while for eight patients only mandibular

dentures were fabricated. In maxillary immediate dentures for six patients only anterior teeth were replaced while for four patients only posterior teeth were replaced while in twelve patients teeth were replaced in both anterior and posterior regions. Similarly for lower jaw, in two patients only anterior teeth were replaced while for six patient's only posterior teeth were replaced.

Four patients already used partial dentures. Of these four patients, in two patients existing prosthesis was converted into an immediate denture.

There was enhancement in the quality of life in these patients after making immediate dentures for them. For two patients immediate denture was fabricated twice. All patients were satisfied with their immediate dentures. Three patients had

complained of pain on buccal side which was corrected by trimming the overextended flange of their denture.

There was marked improvement in different domains of QoL in diabetes mellitus patients after fabrication of immediate dentures, most of the patients were pleased with their prosthesis. Three patients had complained of pain on buccal side which was corrected by trimming the overextended flange of their denture. All patients had improvement in phonetics (P value 0.01), better choice of food (P value 0.00), eating ability (P value 0.01), decrease embarrassment (P value 0.08) and self-assurance (P value 0.025). However, effect of immediate denture on variable like tension was not advantageous having P-value of 0.157 (see Table-I)

Functional Limitation	Trouble Pronouncing Words: After - Before	0.01
	Taste Worse : After -Before	0.014
Physical Pain	Painful Aching: After -Before	0.025
	Uncomfortable To Eat: After -Before	0.01
Psychological Discomfort	Self-Conscious: After - Before	0.025
	Tense: After - Before	0.157
Physical Disability	Diet Unsatisfactory: After - Before	0.000
	Interrupt Meal : After - Before	0.000
Psychological Disability	Difficult To Relax: After - Before	0.025
	Been Embarrassed : After - Before	0.08
Social Disability	Irritable With Others: After -Before	0.025
	Difficulty Doing Jobs: After - Before	0.046
Handicap	Life Unsatisfactory: After -Before	0.000
	Unable To Function : After - Before	0.000

Table-I. Improved Quality Of Life In Diabetic Patients After Provision Of Denture

DISCUSSION

Diabetes Mellitus is a syndrome associated with multiple problems. There is a strong association between diabetes and periodontitis. If periodontitis is not controlled properly then it will further aggravate the situation which results in poor esthetic and improper mastication leading to spontaneous exfoliation of teeth.¹⁵

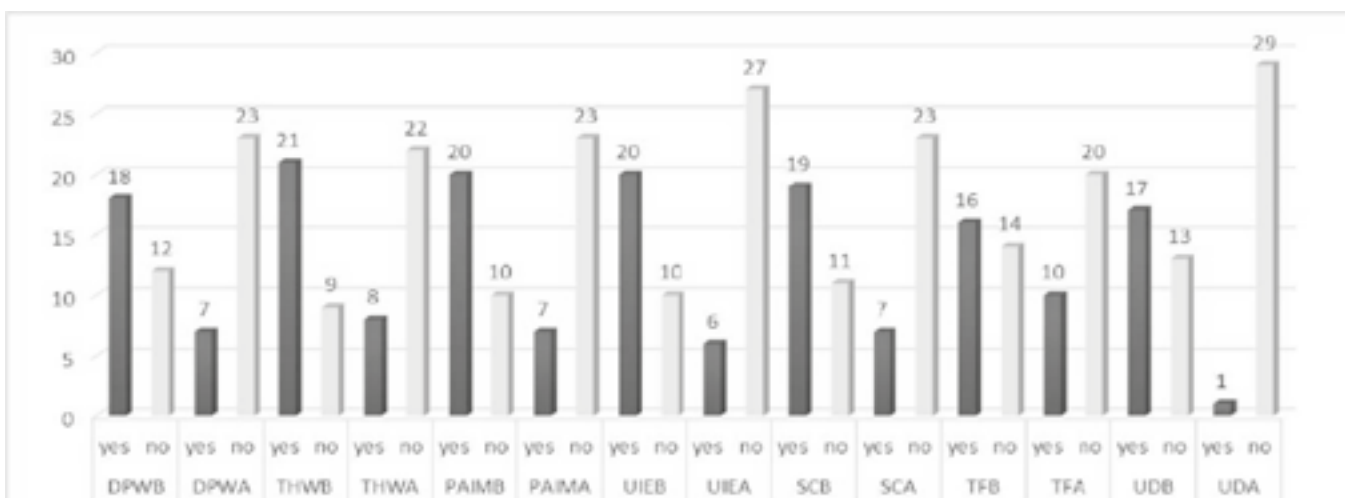
Ochoa et al¹⁶ observed that in 117 diabetic patients 72.6% had periodontitis while Hasseb et al¹⁷ reported similar results in patients with type II diabetes with high incidence of periodontitis as compare to normal healthy individuals. The re-

sults of this study also support the previous studies as in this study patients with diabetes also had severe periodontitis and associated clinical features.

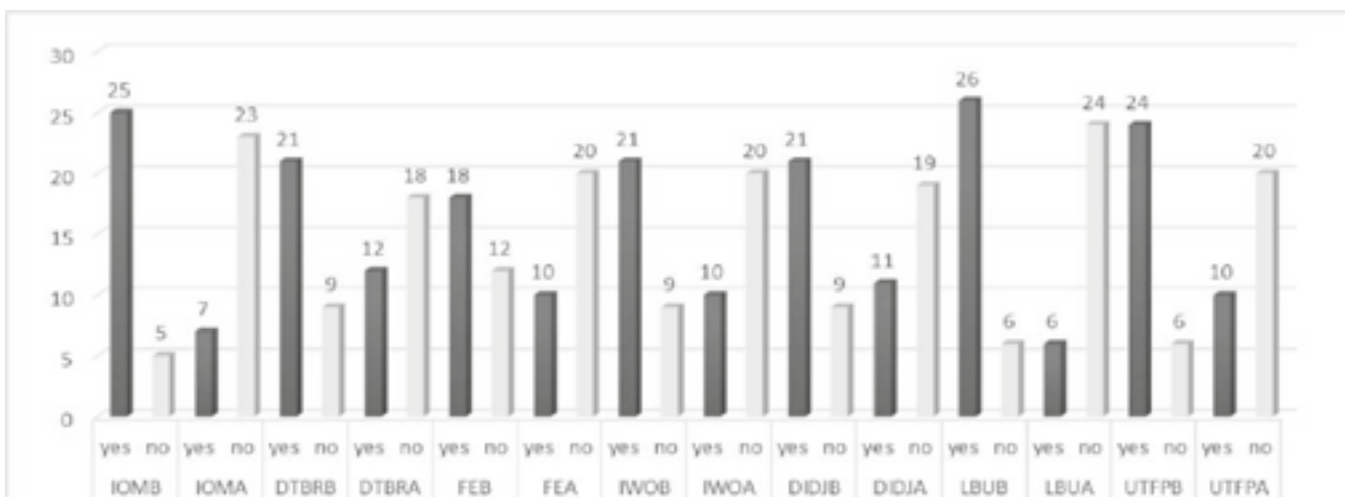
Mersal discussed the fact due to multiple reasons with increasing age there is deterioration in periodontal health is observed which can lead to compromised oral hygiene with multiple loss of teeth. For oral rehabilitation of such patients special strategies should be planned. Immediate dentures can be one of the treatment modalities for oral rehabilitation of diabetic patients.¹⁸

Difficulty Pronouncing Words Before	DPWB	Interruption Of Meal Before	IOMB
Difficulty Pronouncing Words After	DPWA	Interruption Of Meal After	IOMA
Taste Has Worse Before	THWB	Difficult To Been Relax Before	DTBRB
Taste Has Worse After	THWA	Difficult To Been Relax After	DTBRA
Painful Aching In Mouth Before	PAIMB	Feel Embarrassed Before	FEB
Painful Aching In Mouth After	PAIMA	Feel Embarrassed After	FEA
Uncomfortable In Eating Before	UIEB	Irritation With Others Before	IWOB
Uncomfortable In Eating After	UIEA	Irritation With Others After	IWOA
Self-Consciousness Before	SCB	Difficulty In Doing Jobs Before	DIDJB
Self-Consciousness After	SCA	Difficulty In Doing Jobs After	DIDJA
Tense Feeling Before	TFB	Life Been Unsatisfactory Before	LBUB
Tense Feeling After	TFA	Life Been Unsatisfactory After	LBUA
Unsatisfactory Diet Before	UDB	Unable To Function Properly Before	UTFPB
Unsatisfactory Diet After	UDA	Unable To Function Properly After	UTFPA

Table-II.



Abbreviations used in Graph



Graphical Representation before & after provision of Immediate Dentures in diabetic patients

Osagbemi et al¹⁹ reported that in Nigerian population who received acrylic removable partial denture and observed that provision of immediate dentures were more in younger age group (age below 40 years) as compared to old age group which is in contrast to this study.

This fact was also observed in this study as most of the patients reported were above 40 years and after provision of immediate dentures, there was marked improvement in these patients in terms of function and esthetics.

Egan et al did²⁰ study among dentist and denturist of New Zealand in which knowledge and attitude towards immediate denture was observed, they found that one third of them used immediate dentures for their patients which is contrast to this study where all patients included in this study revealed that option of immediate denture was not offered to them by their previous dentist at any stage.

Similar to the study did by Gilboa²¹, in this study fabrication of immediate denture was done with similar strategy for patients with compromised dentition in both anterior and posterior regions in such a way that initially posterior teeth were extracted followed by anterior teeth extraction along with provision of immediate denture.

In this study for two patients their existing prosthesis was used as an immediate denture with slight modifications, Moghadam also discussed a case in which patient's existing prosthesis was used to fabricate immediate complete denture.²²

Provision of immediate dentures in diabetic patients brings marked improvement in quality of life in these patients. Various questionnaires can be used to determine quality of life in diabetic patients. In this study OHIP-14 was used to determine QOL in diabetic patients after provision of immediate dentures and marked improvement in QoL was observed. Giannetti et al also used OHIP-14 questionnaire for their study and noticed marked improvement in quality of life after provision of immediate dentures.²³

No such study has been conducted yet in Pakistan to observe QoL in diabetic patients after provision of immediate dentures. This study though on smaller scale can serve as an initiative to conduct this study in local population on larger scale. It will help to get statistically more significant result.

CONCLUSION

Provision of immediate denture in diabetic patients will help them to achieve better QoL. Among oral health care providers, the role of Prosthodontist is very important. There is also a need to improve awareness of immediate denture in dentist as well as in patients.






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