

Knowledge, Attitude and Practice of Various Management Options Available For Compromised Mandibular Ridges in Edentulous Patients, Among Prosthodontists and Dental Practitioners- A Questionnaire Based Study

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Abstract:

Aim : this study was conducted to assess the knowledge, attitude and practice of various management options available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners and to identify the variations in their knowledge, attitude and practice with respect to dentist's various factors such as age, qualification, specialty in MDS and years of experience.

Material and method:

A cross sectional questionnaire based survey was conducted with an informed consent. The instrument for data collection was an online goggle form with a pretested questionnaire which was sent to the participants questionnaire containing demographic details and knowledge, attitude practice based questions. Data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 26.0, IBM).

Results:

After statistical analysis it was concluded that the knowledge was widespread among postgraduates and dental practitioners and variations existed amongst the dentists with respect to age, qualification, specialization in MDS and years of experience

Key words- compromised mandibular ridge, dental implant.

Date of Submission: 14-04-2021

Date of Acceptance: 28-04-2021

I. Introduction:

Dental implantology is fast becoming a specialty in the field of dentistry. Within the last five decades, dentistry appears to have recorded its most significant advancements.¹ Dental implants are stronger, functionally effective and more durable than bridges and dentures.² With the dental implants, missing teeth can now be replaced with stable, comfortable, natural looking, and feeling artificial replacements. In addition to the dentists' attitude, economic considerations may also impact on the care provided to the patients.¹

The dentists' knowledge and attitude toward a treatment modality can itself significantly influence treatment decision-making and ultimately "shape" how oral health care is provided and become the norm.³ Therefore, the present study was carried out with the prime objective of assessing and comparing the knowledge, attitude, and practice of various management option available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners.

II. Material And Method:

The present study is a questionnaire-based cross-sectional survey carried out among prosthodontists and dental practitioners in various cities in Maharashtra, India.

The survey was anonymous and participation was voluntary. The selection criterion was to include the majority of the Prosthodontists, PGs and dental practitioners. Total 443 dentists participated in the study. Before the start of this study, a pilot study was carried out on 15 respondents who were not included in the main study, with the purpose to check the content and construct validity of the questions. The filled questionnaires were

discussed . The instrument for data collection was an online goggle form with a , pretested questionnaire which was sent to the participants. The purpose of the study was explained to the participants, and the procedure to fill up the responses was also explained .The questionnaires were written in simple English for easy understanding of the respondent.

Section A assessed the demography of the respondents-gender, age, academic post, years of experience etc. Section B included 14 questions which focused on knowledge-based questions regarding various management options for compromised mandibular ridges including various impression techniques and implants, attitude-based questions eliciting what do the dentists feel about removable as well as fixed i.e., implant therapy- and practice-based questions to judge whether dentists apply their knowledge into practice.

The majority of questions were closed ended (14 in number) where the respondents were expected to put a tick sign to the options they feel most relevant. Only one questions was open ended; the respondents were expected to write in detail.

Statistical procedures:

- Data obtained was compiled on a MS Office Excel Sheet (v 2019, Microsoft Redmond Campus, Redmond, Washington, United States).
- Data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 26.0, IBM).
- Descriptive statistics like frequencies and percentage for categorical data, Mean & SD for numerical data has been depicted.
- ✓ Comparison of frequencies of categories of variables with groups was done using chi square test. For all the statistical tests, $p < 0.05$ was considered to be statistically significant, keeping α error at 5% and β error at 20%, thus giving a power to the study as 80%.
- * = statistically significant difference ($p < 0.05$)
- ** = statistically highly significant difference ($p < 0.01$)

III. Results:

I. Assessment of Knowledge, attitude and practice of various management option available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners based on age:

Dentists of the age group of 20-30 were aware of management options for complete edentulous patients with resorbed mandibular ridges also they thought resorbed mandibular ridge compromises stability of denture.

Dentists among all ages (20-30 being highest) feel that about 4 implants are sufficient to get an acceptable prosthesis followed by 2 implants also they confessed that their patients with compromised mandibular ridges face both problems i.e. movement of denture during chewing and Ill fitting denture.

Highest number of dentists among age group 20-30 and 31-40 claimed that they make use of McCord & Tyson's admixed technique(Impression compound & green stick in the ratio of 3:7) followed by conventional technique (ZOE wash impression & border molding with green stick whereas, dentists among age group more than 40 make use of conventional technique only.

Maximum Dentists among all age group accepted that implant retained prosthesis (removable/fixed) is the best line of treatment for management of compromised mandibular ridges and they educate their patients regarding implant retained prosthesis

		Age			Total
		20to30	31to40	Morethan40	
Are you aware of management options for complete edentulous patients with resorbed mandibular ridges?	No	15	6	3	24
	Yes	347	63	9	419
Total		362	69	12	443
		Age			Total
		20to30	31to40	Morethan40	
If you plan conventional prosthesis, which impression technique do you use for making impression of compromised mandibular ridges?	All green technique	27	9	3	39
	Closed mouth technique	18	6	0	24
	conventional technique	129	15	6	150
	McCord & Tyson's admixed technique	188	39	3	230
Total		362	69	12	443

		Age			Total
		20to30	31to40	Morethan40	
Is implant retained prosthesis (removable/fixed) the best line of treatment for management of compromised mandibular ridges?	No	24	9	3	36
	Yes	338	60	9	407
Total		362	69	12	443

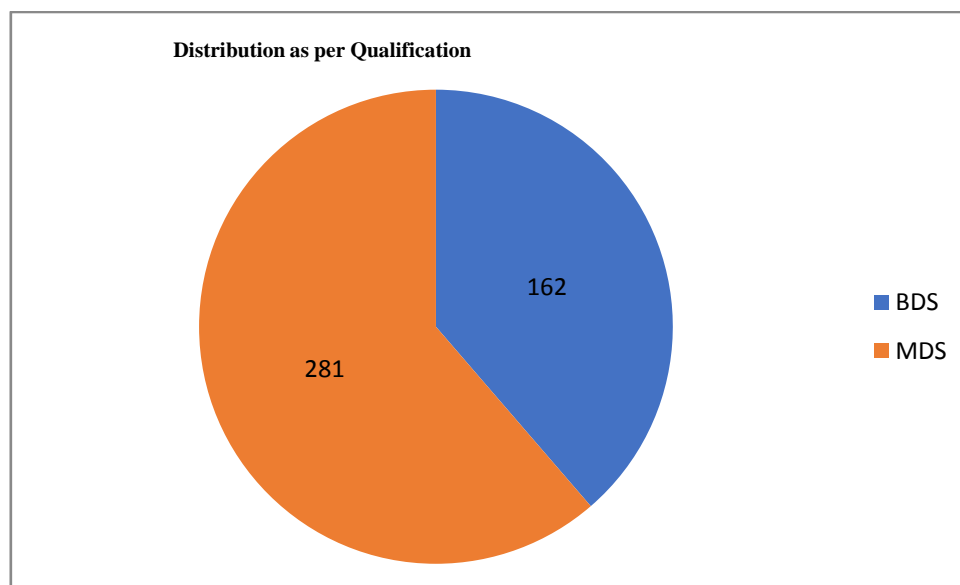
		Qualification		Total
		BDS	MDS	
If you plan conventional prosthesis, which impression technique do you use for making impression of compromised mandibular ridges?	All green technique	9	30	39
	closed mouth functional impression technique	6	18	24
	conventional technique	84	66	150
	McCord & Tyson's admixed technique	63	167	230
Total		162	281	443
		Qualification		Total
		BDS	MDS	
Which treatment options do your patients prefer? Why?	conventional prosthesis, since cheaper option	111	135	246
	implant retained prosthesis, since fixed prosthesis & better results	51	146	197
Total		162	281	443
		Qualification		Total
		BDS	MDS	
Do you prefer conventional prosthesis as treatment option over implant retained prosthesis? If yes why?	No, implant retained prosthesis gives promising results with better stability & retention compared to conventional prosthesis	81	236	317
	Yes, takes less duration & efforts	81	45	126
Total		162	281	443

II. Assessment of Knowledge, attitude and practice of various management option available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners based on Qualification:

Maximum number of graduate dentists claimed that If they plan conventional prosthesis, then they make use of conventional technique (ZOE wash impression & border moulding with green stick)for making impression of compromised mandibular ridges whereas McCord & Tyson's admixed technique(Impression compound & green stick in the ratio of 3:7) is used by maximum postgraduate dentists as per the results of this study.

		Speciality (for MDS Practitioners)								Total
		endo	ODMR	OMFS	Oral pathology	Orthodon	Pedo	Perio	Prostho	
If you plan conventional prosthesis, which impression technique do you use for making impression of compromised mandibular ridges?	All green technique	0	0	0	6	0	3	3	21	33
	closed mouth functional tech	3	0	0	3	3	0	0	9	18
	conventional technique	12	0	12	12	9	0	9	15	69
	McCord & Tyson's admixed technique	15	9	6	9	15	3	12	92	161
	Total	30	9	18	30	27	6	24	137	281

Maximum graduate dentists claimed that their patients prefer conventional prosthesis whereas maximum postgraduate dentists claimed that their patients prefer implant retained prosthesis. Maximum postgraduate dentists confessed that they prefer implant retained prosthesis whereas half of the graduate dentists confessed that they prefer implant retained prosthesis, and half of them prefer conventional prosthesis.

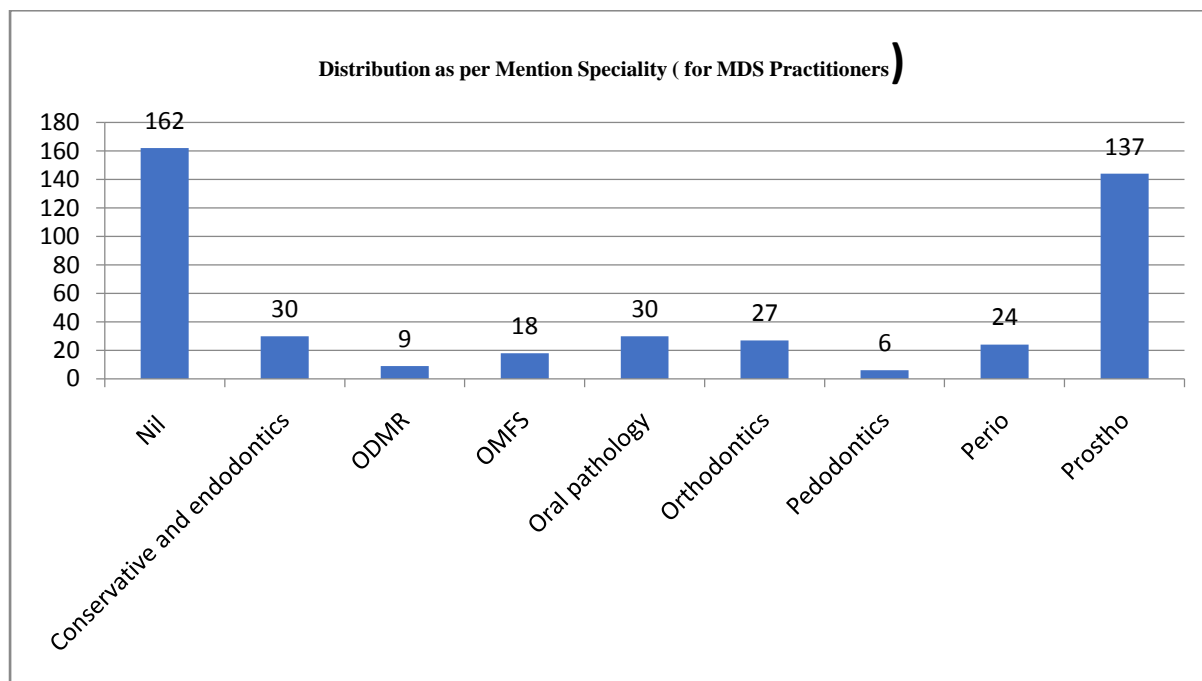


III. Assessment of Knowledge, attitude and practice of various management option available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners based on specialty in MDS:

Highest number of prosthodontists claimed that they prefer McCord & Tyson's admixed technique for making impression in resorbed edentulous mandibular ridges whereas dentists from other specialties claimed that they use conventional technique (ZOE wash impression & border molding with green stick).

Dentists from all the specialties claimed that they prefer implant retained prosthesis over conventional one also they are aware of different retention systems for implant retained prosthesis available in the market and they educate their patients regarding this.

		Mention Speciality (for MDS Practitioners)							Total	
		endo	ODMR	OMFS	Opath	Ortho	Pedo	Perio		Prostho
Do you prefer conventional prosthesis as treatment option over implant retained prosthesis? If yes why?	No, implant retained prosthesis gives promising results with better stability & retention compared to conventional prosthesis	27	3	18	21	24	3	18	122	236
	Yes, takes less duration & efforts	3	6	0	9	3	3	6	15	45
Total		30	9	18	30	27	6	24	137	281



IV. Assessment of Knowledge, attitude and practice of various management option available for compromised mandibular ridges in edentulous patients, among prosthodontists and dental practitioners based on years of experience:

Dentists with minimum to maximum years of experience , all claimed that they prefer implant retained prosthesis for compromised mandibular edentulous ridges also their patients insist for implant retained prosthesis for compromised mandibular edentulous ridges.

		Years of experience			Total
		2to5	6to10	Morethan 10	
Do you prefer conventional prosthesis as treatment option over implant retained prosthesis? If yes why?	No, implant retained prosthesis gives promising results with better stability & retention compared to conventional prosthesis	197	81	33	311
	Yes, takes less duration & efforts	75	48	9	132
Total		272	129	42	443

IV. Discussion:

The absence of natural teeth is a health problem which not only results in compromised function but it also has a great impact on esthetics and psychological well-being of a patient.¹In edentulous patients , severe residual ridge resorption especially mandibular ridge poses clinical challenge in the fabrication of successful prosthesis .so, it takes some different techniques or different treatment options to manage this kind of clinical condition. Several options in techniques involved in conventional removable prosthesis have been described, and so are newly evolved removable or fixed implant retained prosthesis. Dental surgeons are known to play a critical role as health-care educators and also in defining the type of treatments that obtain in their clinics.²

In the present study, it was noticed that dentists among all age groups (especially 20-30 years) were aware of management options for complete edentulous patients with resorbed mandibular ridges also they thought resorbed mandibular ridge compromises stability of denture.

Highest number of dentists among age group 20-30 and 31-40 claimed that they make use of McCord & Tyson's admixed technique(Impression compound & green stick in the ratio of 3:7) followed by conventional technique (ZOE wash impression & border molding with green stick whereas, dentists among age group more than 40 choose conventional technique only. But it was also noticed that maximum of all accept however that

,implant retained prosthesis is the best line of treatment in resorbed mandibular ridge cases in edentulous patients.

Dental implants are stronger, functionally effective and more durable than bridges and dentures. Ramesh et al.(2010) 5 reported that the use of dental implants as the only prosthesis or in part to support other dental prostheses is a treatment modality that has received a wide acceptability by patients who have undergone implant treatment.²The present study showed that almost half of the graduate dentists prefer conventional removable prosthesis over implant retained one, also in conventional prosthesis fabrication they use conventional technique (ZOE wash impression & border molding with green stick. Maximum postgraduate dentists practice implant retained prosthesis and in conventional prosthesis fabrication McCord & Tyson's technique is there in their practice.

The present study states that amongst all specialization, highest number of prosthodontists prefer McCord & Tyson's admixed technique for making impression in resorbed edentulous mandibular ridges. Also they prefer implant retained prosthesis over conventional ones, they are also aware about different retention systems available for implant retained prosthesis. This is followed by the other specialty dentists as well but after prosthodontists. Since prosthodontists are primarily concerned with prosthetic rehabilitation of partial and complete edentulism which includes the diagnosis and treatment planning, they have the best knowledge, expertise and practice for implants. A study conducted by Eckert et al. in 2012[9] showed that most prosthodontists used implant supported prosthesis in their practice. This is closely followed by oral surgeons and periodontists since they are the pioneer in putting a prosthodontists plan for dental implants into action.¹

The present study also shows that dentists with 2 and more than 2 years of experience prefer implant retained prosthesis for compromised mandibular edentulous ridges also their patients insist for implant retained prosthesis for compromised mandibular edentulous ridges.

V. Conclusion :

It could be concluded from this study that factors such as the dentist's years of experience and postgraduate specialization also effect the knowledge, attitude, and practice of various management options available for compromised mandibular ridges in edentulous patients including dental implants.

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