International Journal of Research in Health and Allied Sciences

Journal home page: www.ijrhas.com

Official Publication of "*Society for Scientific Research and Studies*" [Regd.]

ISSN 2455-7803 Index Copernicus value 2016 = 68.10

Original Article

Assessment of Lingual Orthodontics practice among Orthodontists- A questionnaire survey

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***ABSTRACT*:**
Background: Lingual orthodontics provides the best option for comprehensive treatment of mostmalocclusions.The present study was conducted to assess practice of lingual orthodontics among orthodontists. **Materials & Methods:** The present study was conducted in the department of Orthodontics. It comprised of 112 orthodontists selected for the study. All were provided with a questionnaire and asked to respond. Use of email for responding and watsapp was preferred. **Results:** Out of 112 dentists, males were 60 and females were 52.45% dentist used lingual orthodontics, 60% used 2 dimensional technique, 65% were urban dentists, in 60% dentists, duration required for rebonding a single bracket was 15- 30 mins, 75% required 2-4 months for premolar (7 mm) space closure, 605 responded that finishing procedureis required in lingualorthodontics, 80% used power chain for space closure. The difference was significant (P< 0.05). **Conclusion:** Lingual orthodontics is emerging field in orthodontics. The use is increasing among orthodontist day by day as patient desire in enhancing.
Key words: Bracket, Lingual orthodontics, Malocclusion.

Received: 20 January 2017 Revised: 22 February 2017 Accepted: 26 February 2017

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This article may be cited as: Kaur N. Assessment of lingual orthodontics practice among orthodontists- A questionnaire survey. Int J Res Health Allied Sci 2017; 3(2):51-53.

INTRODUCTION

One of the most important challenges in orthodontics is toattain excellence in treatment with comfortable and estheticappliances. From the esthetic perspective, lingual orthodonticsprovides the best option for comprehensive treatment of mostmalocclusions while maintaining full three‑dimensional (3D)control of the dentition.[1]

Despite the demand for "invisible braces," lingualorthodontics failed to catch on in the United States inthe mid-1980s, and it became less significant thereafter.However, further developments at different levels, such aslaboratory-based bracket positioning, archwire fabrication, indirect bonding and perseverance of dedicated clinicianshas led to a rise in the number of lingually treated patients in Europe and Asia. When doctors with experience inthis technique are asked why they have ceased to use it,three explanations are commonly given: The bracket lossrate is substantially higher than in labial cases, and the indirect rebonding technique is complex and imprecise;the finishing process is time-consuming, and the averagequality falls far short of that of labial cases.[2]

Moreover, the lingual position of thebrackets is less obvious and contributes to esthetic appearanceof the patients, but on the other hand, it has some uniqueimplications on other aspects of the treatment such as patientcomfort or treatment mechanics that may hinder achievingthe orthodontic goals.[3] The present study was conducted to assess practice of lingual orthodontics among orthodontists.

MATERIALS & METHODS

The present study was conducted in the department of Orthodontics. It comprised of 112 orthodontists selected for the study. All were informed regarding the study and written consent was obtained. All were provided with a questionnaire and asked to respond. Use of email for responding and watsapp was preferred. Results thus

obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Total- 112		
Gender	**Males**	**Females**
Number	60	52

Table I shows that out of 112 dentists, males were 60 and females were 52.

Table II Questionnaire used in study

Question	Response	Number	P value
1. Do you use lingual orthodontics	Yes	45%	0.8
	No	55%	
2. Appliance used for technique	2 dimensional	60%	0.02
	3 dimensional	40%	
3. Where do you practice	Urban	65%	0.03
	Rural	35%	
4. Duration required for rebonding a single bracket?	10- 15 mins	40%	0.02
	15- 30 mins	60%	
5. Average number of days required for premolar (7 mm) space closure?	2-4 months	75%	0.01
	4-6 months	25%	
6. Do you feel that finishing procedure is required in lingual orthodontics?	In every case	40%	0.02
	Few cases	60%	
7. Method of spaceclosure used?	NiTi coil springs	20%	0.01
	Power chain	80%	

Table II shows that 45% dentist used lingual orthodontics, 60% used 2 dimensional technique, 65% were urban dentists, in 60% dentists, duration required for rebonding a single bracket was 15- 30 mins, 75% required 2-4 months for premolar (7 mm) space closure, 605 responded that finishing procedureis required in lingualorthodontics, 80% used power chain for space closure. The difference was significant (P< 0.05).

DISCUSSION

Few aspects of dentistry have undergone as dramatica boom in recent years as dental esthetics. Howeverin contrast to services provided by general dentists, orthodontic therapy often extends over a long period, so not only is the outcome of esthetic significance to thepatient, but also the course taken to achieve that outcome.From the esthetic perspective the best appliance to betotally invisible and give complete three-dimensional (3D)control to correct any kind of malocclusion is a fixed lingual appliance.[4]

Lingual orthodontics is developingin India, and many clinicians practice extraction and complexcases. Many orthodontists do not have excellent results,and this shows that there is still room for improvement.[5]Individualization of the bracketbase, a process used in various laboratory processes andalways essential in the lingual technique, takes place duringfabrication of the single brackets; in other words, eachtooth has its own customized bracket, made with state-of-theartcomputer-aided de- sign/computer-aided manufacturing(CAD/CAM) soft- ware coupled with high-end, rapid prototyping tech- niques. The iLingual 3D system is one suchinnovation using state of the art CAD/CAM technology.[6] The present study was conducted to assess practice of lingual orthodontics among orthodontists.

We found that out of 112 dentists, males were 60 and females were 52. In this study, 45% dentist used lingual orthodontics, 60% used 2 dimensional technique, 65% were urban dentists, in 60% dentists, duration required for rebonding a single bracket was 15- 30 mins, 75% required 2-4 months for premolar (7 mm) space closure, 605 responded that finishing procedureis required in lingualorthodontics, 80% used power chain for space closure.

Fillion et al[7] found that a total of 248 orthodontists responded to the survey, 70% orthodontists said that they practice lingual orthodontics.Among the orthodontists who practice lingual orthodontics, 71% orthodontists treat extraction and non extraction cases and 29% treat only non extraction cases. Forty percent orthodontists said their final

finishing of case is good, 16% said that final finishing is average,26.5% said that final finishing is very good, and only 17.5% said that it is excellent. Statistically significant correlation exists (P = 0.004) between the treatment outcome and use of laboratory for initial setup.

The first prototype of iLingual braces were developed by Dr. Jignesh Kothari in the year 2007 and thereafterseveral prototypes were produced to modify the designand make it more user-friendly at the same time making it more efficient for treatments. The brackets were madeby CAD design manufactured with rapid prototyping andcasted in gold alloy. In 2009 iLingual ribbon arch stock bracket (0.025″ × 0.0175″ slot size) was introduced with vertical insertion in anteriors and horizontal insertion inposteriors, the same was used with the modified target setup for individualization.[8]

CONCLUSION

Lingual orthodontics is emerging field in orthodontics. The use is increasing among orthodontist day by day as patient desire in enhancing.

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Source of support: Nil **Conflict of interest:** None declared