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PERCEPTION OF PEOPLE FOR POST- ORTHODONTIC RETENTION, NORTH GUJARAT POPULATION A QUESTIONNAIRE-BASED SURVEY

Orthodontology

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ABSTRACT

Summary Objective: This transverse study aimed to know the level of knowledge and expectations amoung people for future orthodontic treatment have about post-orthodontic retention and to investigate the influence of sociocultural characteristics.

Material and methods: A total of 220 successive people participated in the study (as patient, parent, or legal guardian) for a prospective orthodontic treatment (mean age:17.7 years; 37.3 per cent male) received a questionnaire to assess their knowledge and expectations about post-orthodontic retention before their first appointment. Data were analysed descriptively, whereas predictors were identified with logistic regressions at P value of less than or equal to 0.05.

Results: Among the 220 responders, 54.09 per cent knew that retention appliances are used after orthodontic treatment and 45 per cent (n = 99) believed perfect results can guarantee stability, whereas at the same time, 48.8per cent (n = 106) knew that teeth can move on their own without any orthodontic appliances. The 35 per cent considered stability of the orthodontic result is important , some patient preferred removabl retainers (67.27 per cent; n = 148),some believed that the general dentist to be primarily responsible for a stable result (47.73 per cent; n = 105), and found it appropriate to charge for recall visits (59.55 per cent; n = 131). Participants'of the studys gender, age, education, nationality, and past orthodontic experiences within the close family significantly influenced answers.

Limitations: a single-centred survey conducted in single university intense to conclude the interpretation of the results.

Conclusions: Although stability of orthodontic treatment results is important to people deciding about a prospective orthodontic treatment, knowledge regarding the need for postorthodontic retention varies and may at times be contradictious for the ortho treatment. cultural factors seem to influence the level of knowledge and the expectations on post-orthodontic retention.

KEYWORDS

INTRODUCTION

The importance of tooth alignment after orthodontic treatment for preventing relapse was identified in 1904 [1], and it is clinically been emphasized since the 1980s–1990s[1-5]. It has been very important for orthodontic patients which were in need of retention after orthodontic treatment[6].

Several studies have been conducted over the last years for assessing the level of knowledge or the prevailing preferences of dentists and orthodontists. These surveys have been conducted in numerous countries, including Australia [7], Ireland [8], Lithuania [5], Malaysia [9], the Netherlands [10, 11], New Zealand [7], Saudi Arabia [12], Switzerland [13–15], the UK [16], the USA [17–19], and Norway [20], and gave contribution for understanding that how orthodontic retention is being important part of orthodontic treatment.

For establishing the evidence of level of knowledge and perception of the orthodontic retension is very less amoung the people who came for the orthodontic treatment. Several studies conducted for the expectation of orthodontic treatment in various aspects in general[21] but post orthodontic retention have not been studied as a scientific investigation .

The evidence regarding patients awareness as well as expectation of post orthodontic retention is disturbing. The necessity for patient to understand their expectations and the level of knowledge of people interested in an orthodontic treatment is accentuated by the fact that post-orthodontic satisfaction is very important to the patients' perception of tooth stability and responsibilities during the retention phase[22].

The main aim of this study was, to assess the level of knowledge and the expectations concerning about post-orthodontic retention of people enrolled for an orthodontic treatment, before their first orthodontic appointment for assessment. The secondary aim was to discern whether demographically and sociocultural characteristics of the participants influence for their awareness of level of knowledge and their expectations.

MATERIALAND METHOD

A random questionnaires on the perception of people for post orthodontic retention was distributed among patients between the age group of 16-25 years on their appointment at the clinics of Department of Orthodontics and Dentofacial Orthopedics at the center of Narsinhbhai Patel Dental collage and Hospital, Visnagar. Before the patients start their initial treatment they all were handed a questionnaire survey paper by the dental assistant who was not included in the study. All the patients were explained the goal of survey. Participants are guided to fill the questionnaire silently and independently without any time limit and they were also explained about the importance of survey and also instructed that there is no any compulsion to fill all the question asked in the survey.

RESULT:-

A total of 220 samples were selected. Questionnaires was distributed to the patients who came on their 1st appointment were filled and returned. Each and every questions were filled by the participants. Choice of the answer varies from person to person as their level of knowledge as well as expectations towards the Post Orthodontic Retention are not the same.

The mean age of the 220 participants was 17.7 years. The majority of the people don't have any experience with any orthodontics also they don't have any close family members who got experience with the orthodontic treatment. Thus the participants came for their first appointment were by own initiation for the orthodontic treatment.

The patients participants in the survey of level of knowledge on post orthodontic retention are given in (Table-1). Half of the participants (54.09%) were aware that retention appliance are used after orthodontic treatment. 56.36% participants thought that retention was necessary in half of the case. Finally the majority believed both that a perfect orthodontic result don't guarantee the stability and also had a thought that the tooth don't move without the orthodontic appliance.

Table 1: Distribution of study subjects based on Level of knowledge

Q1: Do you know that appliances are used for retention after orthodontic treatment?			
Response	**N**	**%**	**p value**

Yes	119	54.09	0.05*
No	101	45.90	
Total	220	100	
Q2: In which cases do you think such appliances are necessary?			
Response	**N**	**%**	**p value**
In Rare cases	27	12.28	0.05*
In half cases	124	56.36	
In Most cases	58	26.36	
In All cases	11	5	
Total	220	100	
Q3: When do you consider retention necessary?			
Response	**N**	**%**	**p value**
After comprehensive tooth movement	16	7.27	0.05*
After treatment with extractions	49	22.27	
After treatment during growth	56	25.45	
After treatment in adults	54	24.54	
In all cases	45	20.45	
Total	220	100	
Q4: Does perfect treatment result can guarantee stability?			
Response	**N**	**%**	**p value**
Yes	99	45	0.05*
No	121	55	
Total	220	100	
Q5: Can teeth also move without orthodontic appliances?			
Response	**N**	**%**	**p value**
Yes	106	48.18	0.05*
No	114	51.82	
Total	220	100	

Level of significance ≤ 0.05, * Significant Result, ** Non-Significant Result

Statistically, no significant result was observed among study subjects with level of knowledge of orthodontic treatment. (p >0.05)

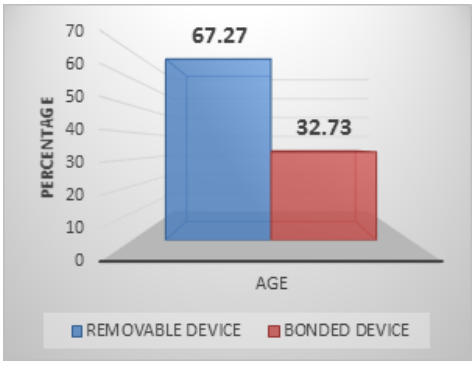
Expectations of the patients towards orthodontics retention are concerned (table 2). 28.18% participants thought that retention should last for <1years , 36.82% of thought that it should last for 1 to 3 years and remaining 34.10% believe that retention should last for 3 to 10 years of age. The majority of participants rated the stability of orthodontics result as rather important and ambivalent. Where as mostly patients prefer a removable retainer. Mostly patient recall appointment need schedule yearly ie 25.45% and other preferred to have their appointment b/w 2 years [34.55]. And the majority of participants agreed that the responsibility for their relapse were because of General dentist who gave advice to them for orthodontic treatment . As they thought that dentist should clearly inform the patient, then orthodontics and lastly parents were responsible. Last at the end the patients agreed for the charges for the recall visit about 59.55% of participants agreed.

Table 2 distribution of study subjects based on level of expectation on orthodontic treatment.

Q1: How long do you think should the retention phase be?			
Response	**N**	**%**	**p value**
< 1 Year	62	28.18	0.05*
1-3 Years	81	36.82	
3-10 Years	45	20.45	
Lifelong	32	14.55	
Total	220	100	
Q2: Is a stable result important for you?			
Response	**N**	**%**	**p value**
Not Important	38	17.27	0.05*
Ambivalent	63	28.64	
Rather Important	77	35	
Extremely important	42	19.09	
Total	220	100	
Q3: What type of retention device would you Consider?			
Response	**N**	**%**	**p value**
Removable device	148	32.73	0.05*
Bonded device	72	67.27	
Total	220	100	
Q4: When do you believe a recall is necessary?			
Response	**N**	**%**	**p value**
Every 3 months	20	9.09	0.05*
Every 6 months	48	21.82	
Yearly	56	25.45	
Every 2nd Year	76	34.55	
Every 5th Year	20	9.09	
Total	220	100	
Q5: Who is responsible for the stability after orthodontic treatment?			
Response	**N**	**%**	**p value**
Patient/ Parents	64	29.09	0.05*
General Dentist	105	47.73	
Orthodontist	51	23.18	
Total	220	100	
Q6: Is it appropriate to charge for recall visits?			
Response	**N**	**%**	**p value**
Yes	131	59.55	0.05*
No	89	40.45	
Total	220	100	

Level of significance ≤ 0.05, * Significant Result, ** Non-Significant Result

Statistically, significant result was observed among study subjects with level of expectation of usage of retention devices in orthodontic treatment. (p ≤0.05)



Graph 1: Distribution of study subjects based on Level of expectation on usage of retention device.

DISCUSSION

This study appears to address individuals before any orthodontic appointment to assess their level of knowledge and the expectations about a prospective orthodontic treatment regarding post-orthodontic retention. To identify what they know and what they expect at the time of their ongoing treatment, considering it to be of high interest to aim people who are in charge of deciding about an ongoing orthodontic treatment involving a prolonged retention protocol.

Level of knowledge

Less than half of prospective patients or their guardians (54.09%) were aware that retention appliances are used after orthodontic treatment was one of the most striking findings of this study. Almost all patients are subject to some type of retention protocol [6], and considering the finding that post-treatment stability is seen as extremely important , this survey reveals an obvious divergence between the participants' expectations and clinical reality. Many participants remained unaware of a need of retention appliances instead of having a previously treated close family member that seems to increase the awareness among the people.

A second striking observation is another conflict in the participants' understanding of tooth movement and stability. Although most of the participants (51.82per cent) believed that teeth can move without any orthodontic force, most also believed that a perfect result can guarantee stability *per se* and only 56.36 per cent assumed that retention appliances are needed in half of the cases. The trained orthodontist appreciates that continuous tooth migration throughout adolescent and even adult life affects both occlusion and alignment [24–27] compromising the stability of the achieved orthodontic results [3, 28, 29]. This study has proof that this understanding is also shared by those higher level of education participants. Yet, for the most of the population, non-orthodontic tooth movement is apparently not

spontaneous. Thus, this knowledge has to be transmitted, at earliest before retention appliances are discontinued. The lack of knowledge concerning tooth migration seems especially acute with regard to orthodontics in adults, for which only 35 per cent participants believed it was rather important to retain the achieved orthodontic result. Logistic regression models revealed that certain sociocultural factors, such as age, the level of education or past experience of orthodontics within the family, all had a significant impact on the understanding of tooth movement and stability.But these influences remained mostly moderate, with the exception of the level of education.

Recent surveys which are done in department of orthodontics & dentofacial orthopaedics, visnagar, Gujarat, that orthodontists tend toward a prevalent approach in their retention protocol, retaining all post-orthodontic patients. This present survey shows that participants deciding on a future orthodontic treatment are convinced that only few patients are in need of retention devices. On the basis of this survey, it is very important to educate the patient about post orthodontic retention.

Expectations

Patients' overall satisfaction with their orthodontic experience is compared to their expectation of stability [22]. A deeper understanding of particular expectations help to avoid future dissatisfaction.

Overall, this survey revealed that although most of the participants considered a stable result very important, an evident difference in opinions and expectations exists concerning retention duration, follow up intervals, or preferred devices.

According to this study, two-thirds of the participants choosed bonded retainers over removable devices, but no sociocultural variables that might influence the choice were seen.

As far as expectations and preferences regarding orthodontic 'retention time' are concerned, very less orthodontic patients or their guardians expected lifelong retention, and the most expected a retention phase of between 1 and 3 years. No evidence basis exists on the optimal duration of retention, and the extent of the retention duration is mostly up to the freedom of the orthodontist [13, 17]. Seeing the contemporary literature, a more approach toward lifelong retention can be observed. This major implications for patients appropriate the number of follow up visits and the demands made on their level of compliance. The lack of evidence and the absence of binding protocols on retention period or follow up intervals [8, 10, 13, 15, 17] emphasizes the point that orthodontists must not adopt a paternalistic approach on that matter, but rather seek to involve the patient in the decision-making process concluding or extention of the retention phase.

Lifelong retention will not only increase demands on the contributory role of participants but results in an intensified involvement of general dentists [13, 14]. This survey showed that only 25 per cent participants consider general practitioners to have any responsibility in the maintenance of retention devices. Extended retention should be based on an involvement or at least a well-functioning communication and collaboration with general dentists [13,15]. Why north Gujarat population were more likely to choose lifelong retention remains open for interpretation.

On a positive note, this study shows that for almost all participants (94.5 per cent) a stable result was 'rather important' or 'extremely important', most were also ready to assume a specific degree of financial commitment and personal responsibility to assure a stable result. The majority of participants (36.82 per cent) were ready to accept a retention phase of at least 1-3 year, most of them expecting the duration to last much longer then usual. Almost all participants found follow up intervals of 2 years, and 59 percent were prepared to pay for these follow up visits. But only 50 percent exclusively specified in their answers that they viewed the patient to be responsible for the stability after orthodontic treatment, the overall results hold witness that patients are willing to accept a certain degree of commitment. Although prospective participants or their guardians place the burden to assure a stable result on the general dentist, they also realize that maintenance is important and can only be achieved with compliance. These findings indicate that the orthodontist finds willing partners in post-orthodontic patients to contribute toward a successful retention phase. Somewhat surprisingly, females and patients with higher educational background were more likely to be willing to pay for follow up visits. These observations are difficult to interpret but are getting along with a previous findings indicating that people with higher education are more likely to be willing to pay more for healthcare services [30] and agreed with past observations that women tend to behave more generous in nature [31] and more pro-socially than men [32].

This survey assesses decision makers of their knowledge and expectations 'before' they have had any orthodontic input. Considering differences found between this study and other studies directed to patients 'already in retention' may indicate whether patients or their decision makers actually change their expectations having received further information.

However, this is not feasible based on the available literature. On the one hand, different national or ethnic background of participants forbid a direct comparison [22, 33, 34]. On the other hand, based on recent systematic reviews [21, 35], the literature is based on questionnaires that are not standardized, poor in the quality of their methodology, and their analysis of the results, which forbids forming sufficient evidence to help find any influencing factor.

CONCLUSION:

These questionnaire based survey state that the result in orthodontic treatment is very important for people deciding about the orthodontic treatment knowledge regarding the orthodontic retention to the people who participated in the survey varies according to the place that participants belong. On the basis of this study conducted shows that it is mandatory to inform prospective orthodontics patients and their guardians about the post orthodontic retention. Orthodontic mostly advised to wear the Hawleys Retainers for full time and bonded lingual retainer at mandibular arch. Pateints wearing removable retainer were instructed to wear the retainer for full time. Moslt orthodontics didn't instruct to wear full time thus it means that patients have to wear the lingual retainers for full time.

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