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SURVEY ON THE VARIOUS ORTHODONTIC RETENTION PRACTICES BY GENERAL DENTAL PRACTITIONERS/ORTHODONTISTS

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ABSTRACT

Objective - Relapse is a challenge that demands the best of the dentist to curtail it. Retention is an indispensible aspect of any orthodontic treatment. Retainers are main stay treatment modality followed universally for the prevention of relapse. In spite of retention using retainers being ubiquitous among dentists the retention practices followed by individual general dental practitioners and orthodontists is extremely differed. The survey study aims to extract the cross sectional data regarding retention practices among general dental practitioners and orthodontists.

Material and Method - The study was conducted as a questionnaire study, which was about knowledge ,attitude and practices(KAP) .The sample size was 150 which was statistically significant .The study included responses from the general Dental practitioners and Orthodontists and with an exclusion of BDS students and Interns. The questionnaire was circulated in the Google form and the responses were recorded.

Results - The removable thermoplastic retainer was preferred by 64% participants. The duration of wear of retainers had a close range of preferences such as 32% preferred 12-18hours of wear, 24.7% chose 9-12 hours ,22% preferred 18-24% hours and 21.3% chose 6-9hours. Commonly, 56.7% general dental practitioners and orthodontists preferred 3-9 months of wear of the retainers whereas 34.7% preferred 10months -2 years and a minimal range of preference was noticed for practices of more than 2 years and less than 3 months of wear of the retainers. 82% of the participants check for all the factors whereas 6% checks for adaptability and retention and less than 5%check for only the impingement and wire breakage in the removable retainers. The review intervals usually preferred by the general dental practitioners and orthodontists for retainer check is once every month which is of 48% , 26% prefer every alternate month ,22% also suggest a review of once every 6 months and 4% response suggested a retainer check once a year. 94% participants suggested a need for universal orthodontic retention guidelines.

Conclusion - The removable thermoplastic retainer was preferred by majority of the practitioners. There was a variable response for the duration and no. of hours of wear of retainers. The points to be followed for review of a retainer were done nicely by the practitioners but the review intervals showed a varied response. The general dental practitioners and orthodontists felt that there should be a general guidelines for retention protocol.

KEYWORDS : Relapse, Retention, Retainers, Orthodontics, General Dentist, Stability, Retention protocol.

INTRODUCTION

'Relapse is any loss of the correction achieved by orthodontic treatment'.(1) The term 'change' suits orthodontic relapse as not necessarily the treated teeth moves to the initial position rather, the teeth moves to an undesirable position.(2) The causes of relapse are multiple and often disputed upon. Relapse could be due to either physiological growth patterns or oral factors.(3) The oral factors include gingival and periodontal factors, occlusal factors, soft tissues and musculature factors.(4-6) Relapse is the most challenging obstacle faced by the dentist. True to the words of Oppenheim, "Retention is one of the most difficult problems in orthodontia; in fact it is the problem", retention is a force to reckon with.(7) Almost every tooth moved orthodontically has the tendency to revert back to its original position. Relapse is unwarranted for and needs to be eliminated. Earnest efforts have been taken in the process to understand the reasons for relapse and the ways to establish stability. A well agreed perspective is the one wherein establishment of a stable occlusion effectively produced a balanced environment preventing tooth movement.

Every orthodontic corrections require certain fixed/ removable appliances which would help conserve the treatment and allow time for the periodontium to recast around the new position of the teeth.(3) The role of the general dentist in the prevention of relapse and the proper preservation of the occlusion cannot be overly emphasized. It becomes essential for the orthodontists ,patients and general dental practitioners to understand the importance of retainers after orthodontic treatment.(8). This study seeks to understand the general practitioners' attitude and common practices with regards to the retention practices followed by them. This article also places an emphasis on the need for a universal retention protocol guideline to assist general dental practitioners.

METHODOLOGY

The study was conducted as a questionnaire study, which was about knowledge ,attitude and practices(KAP) .The sample size was 150 which was statistically significant .The study included responses from the general dental practitioners and orthodontist and with an exclusion of BDS students and interns. The questionnaire was framed as two sections ,where the first section includes the demography of the participants such as name ,age , gender and years of dental practice. The second section includes retainers and retention protocol such as the type of retainers, duration of their use, factors influencing the retention and the factors to check during the review of the patient. The questionnaire was circulated in the Google form to the general dental practitioners and the orthodontists.

RESULTS

The survey conducted among 150 general dental practitioners and orthodontist reveals a wide range of age group of the participants who were between 22-45 yrs of age .The preference on the type of retainers used were removable retainers which is 52% whereas the fixed retainers had a preference of 48%.(chart 1).Among the removable retainers such as Thermoplastic retainers and Hawley's retainers, 64% participants preferred Thermoplastic retainers and 36% preferred Hawley's retainers.(chart 2). The duration of wear of retainers had a close range of preferences such as 32% preferred 12-18hours of wear ,24.7% chose 9-12 hours ,22% preferred 18-24% hours and 21.3% chose 6-9hours(chart 3).Commonly,56.7% general dental practitioners and orthodontists preferred 3-9 months of wear of the retainers whereas 34.7% preferred 10months -2 years and a minimal range of preference was noticed for practices of more than 2 years and less than 3 months of wear of the retainers(chart 4).

On surveying the factors influencing the retention ,extraction and age of the patients were considered.37.3% participants chose the option of extraction may influence the retention.31.3% response was equally given for options of both extraction influences the retention and they don't influence the retention. Therefore there were no clear results for the fact that extraction influences the retention (chart 5). Among the age factor,68.7% participants reveal age influences the retention whereas 16% reveals age may influence and 15.3% suggests age does not influence the retention(chart 6).

On considering the practices followed by the general dental practitioners and orthodontists,58.7% participants reveal that the retainers are delivered within 3 days after debonding ,19.3% preferences were for delivery within same appointment and within same week after debonding .Few responses also revealed preference of retainer delivery within the same month of debonding(chart 7). Usually 49.3% suggested a cleaning measure of using dentrifices(tooth powder, tooth paste) for maintenance of removable retainers.37.3% also preferred using soap and water and a 13.3% participants preferred using saline for cleaning the removable retainers(chart 8) .

During the review of removable retainers factors such as adaptability, retention, impingement and wire breakage are usually checked.82% of the participants check for all the factors whereas 6% checks for adaptability and retention and less than 5%check for only the impingement and wire breakage in the removable retainers(chart 9). In a fixed retainers the practitioners check on the food accumulation, bond site, calculus and oral hygiene.89.3%general dental practitioners and orthodontists check for all the factors during their review.7% participants review on oral hygiene .Minimal range of preference where given for review on bond site and calculus individually(chart 10). The practitioners on post insertion of retainer instructed their patients with regards to oral hygiene, nutrition and retainer maintenance.65.7% participants educated their patients on all the factors whereas 18% instructs only on the retainer maintenance ,14.3% instructs with regards to oral hygiene and a minimum of 2% provides instructions only on the nutritional factors(chart 11). The review intervals usually preferred by the general dental practitioners and orthodontists for retainer check is once every month which is of 48% , 26% prefer every alternate month ,22% also suggest a review of once every 6 months and 4% response suggested a retainer check once a year(chart 12). An at most response of 94% participants suggested a need for an universal orthodontic retention guidelines(chart 13).

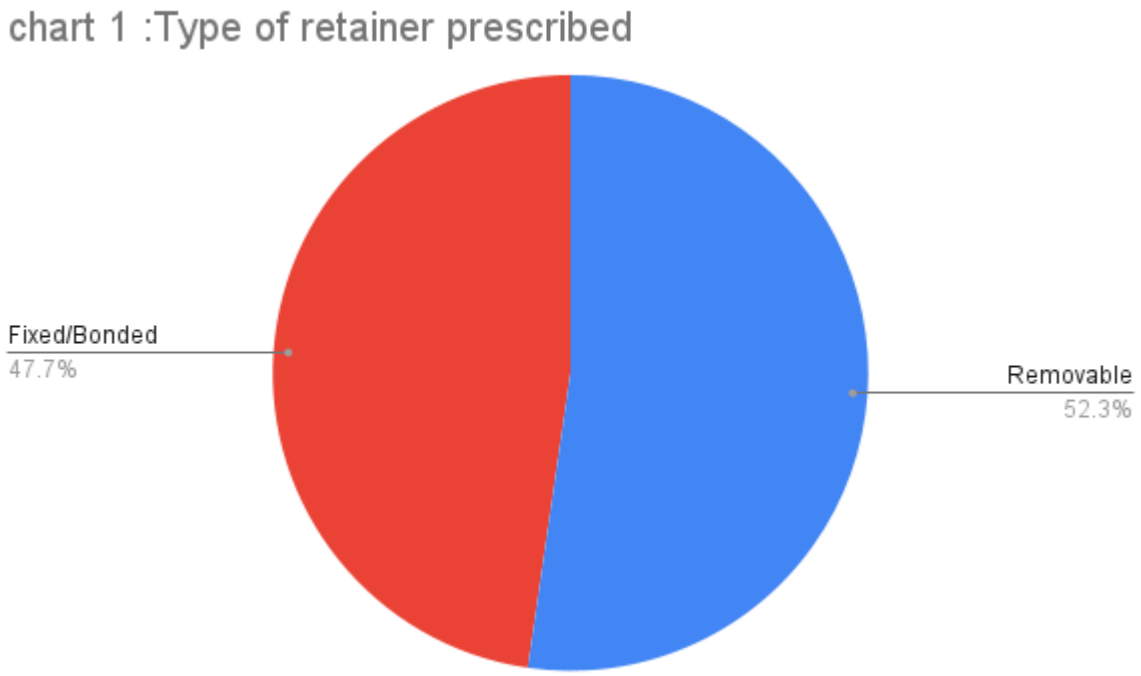


Chart 2 :Type of removable retainers advised

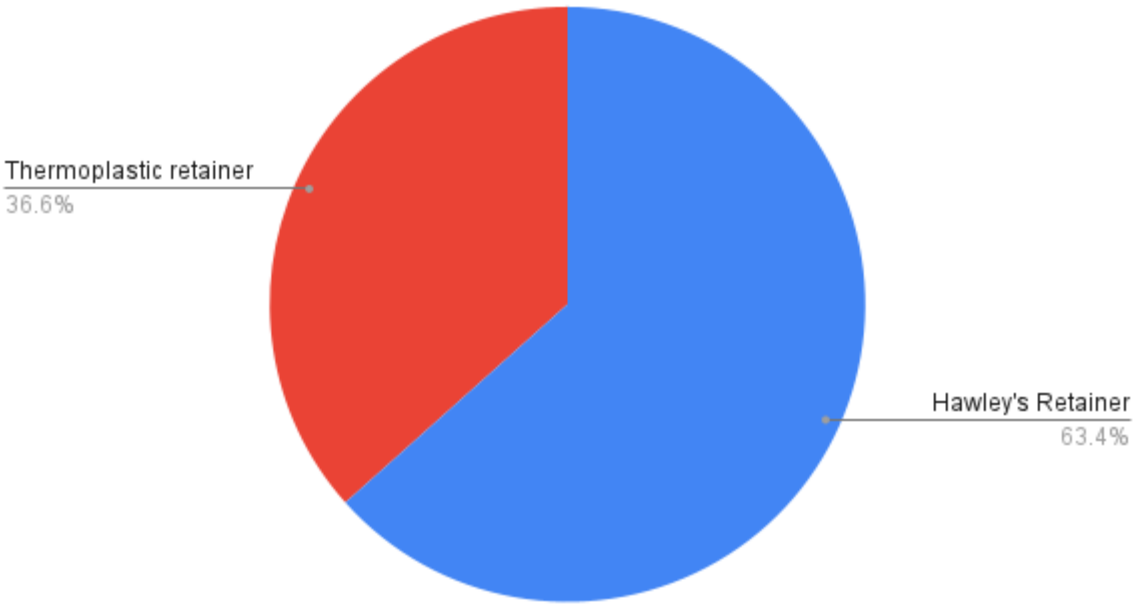


chart 3:Duration of wear of retainers

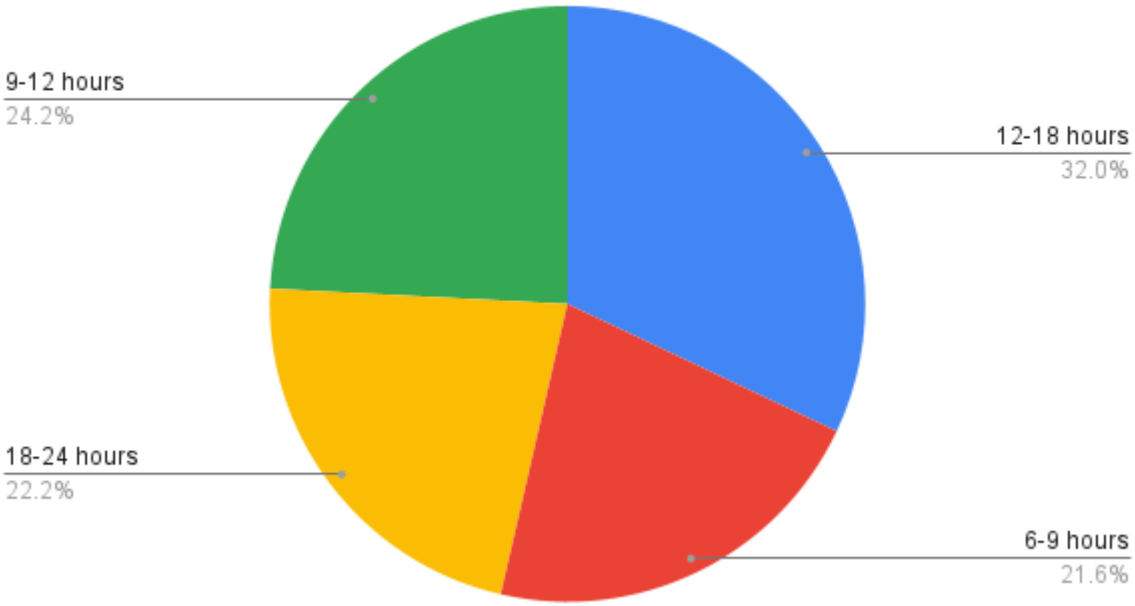


Chart 4 :Retention protocol that you practice.

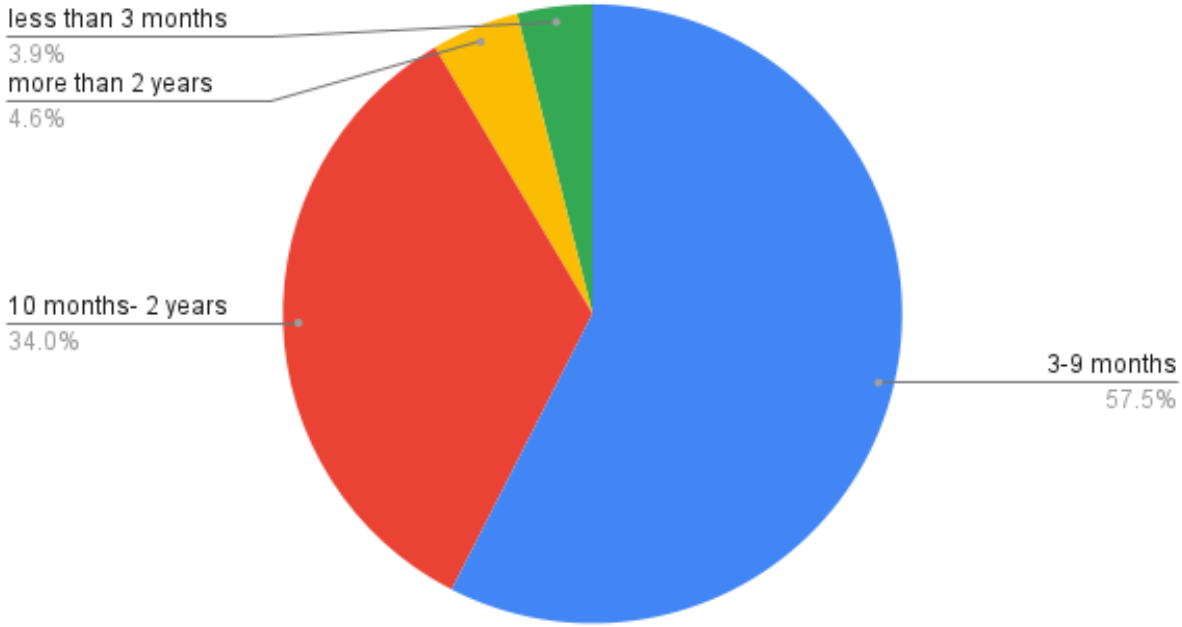


chart 5: Effect of extraction on selecting the type of retainers

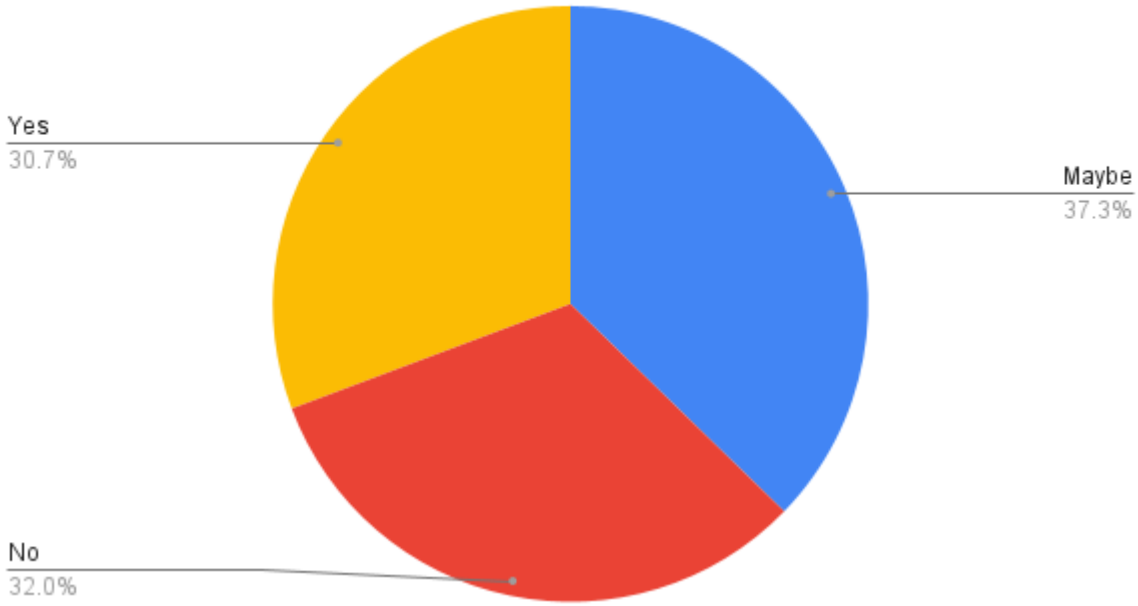


chart 6 Influence of age on retention

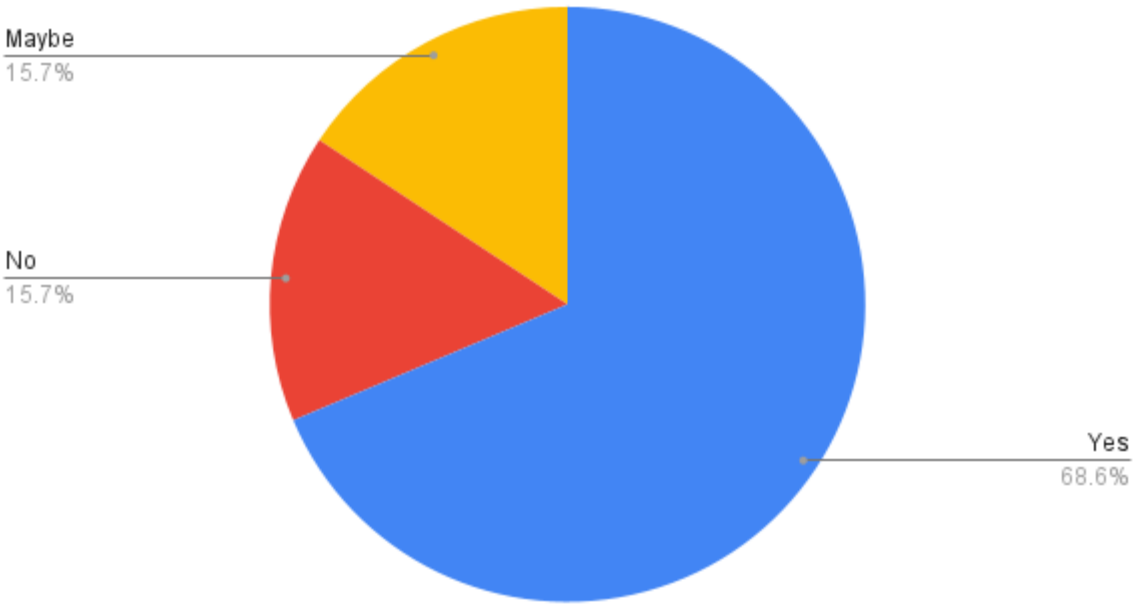


chart 7 Time taken to deliver a retainer

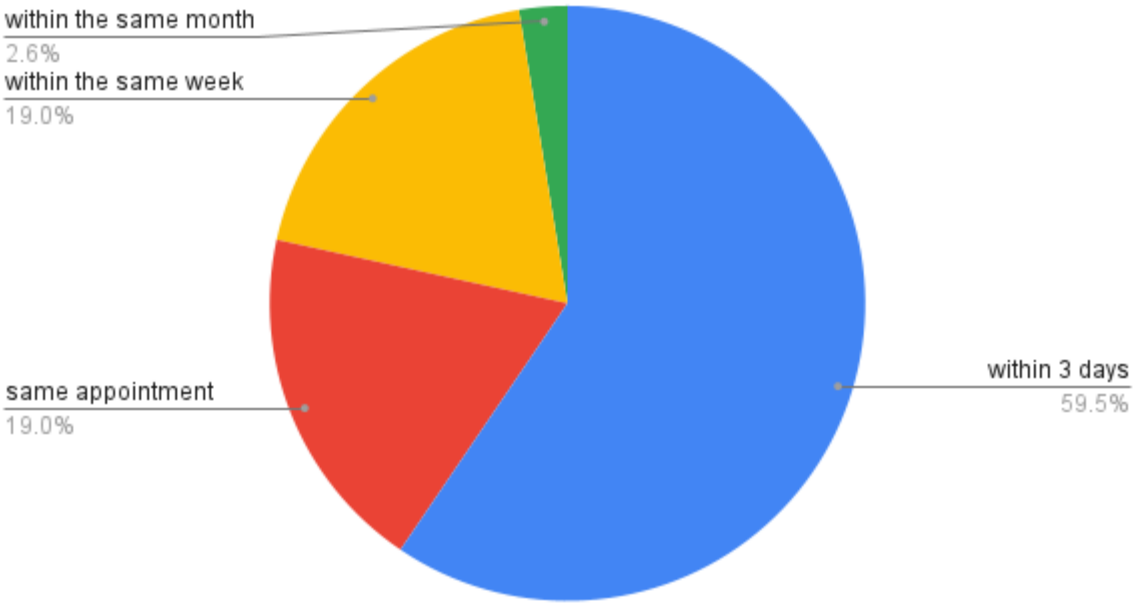


Chart 8 Cleaning measures followed

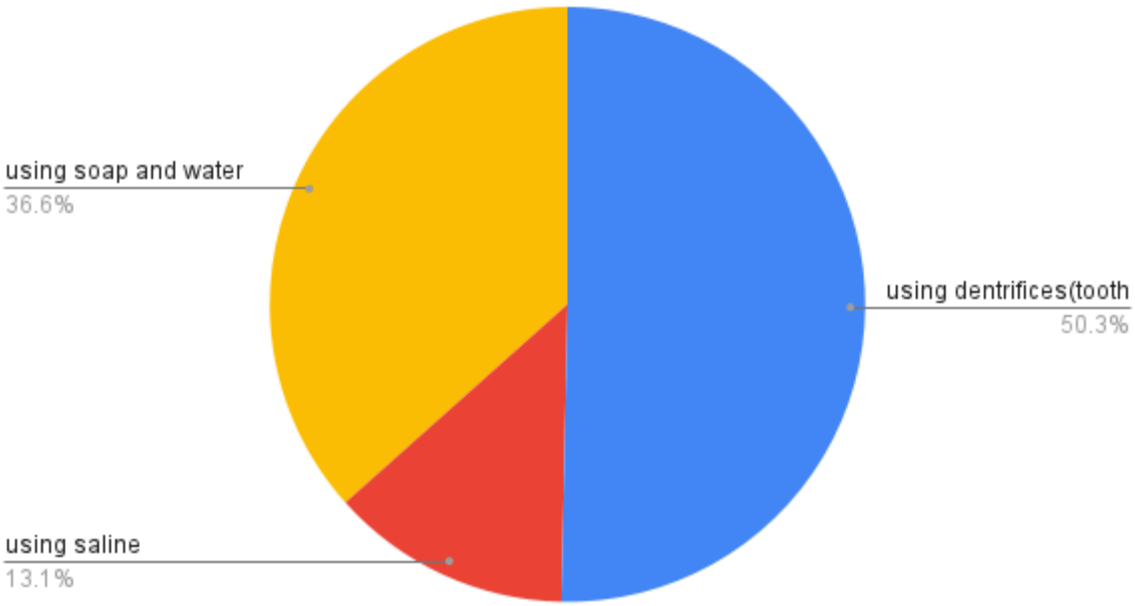


Chart 9 Factors to check during review

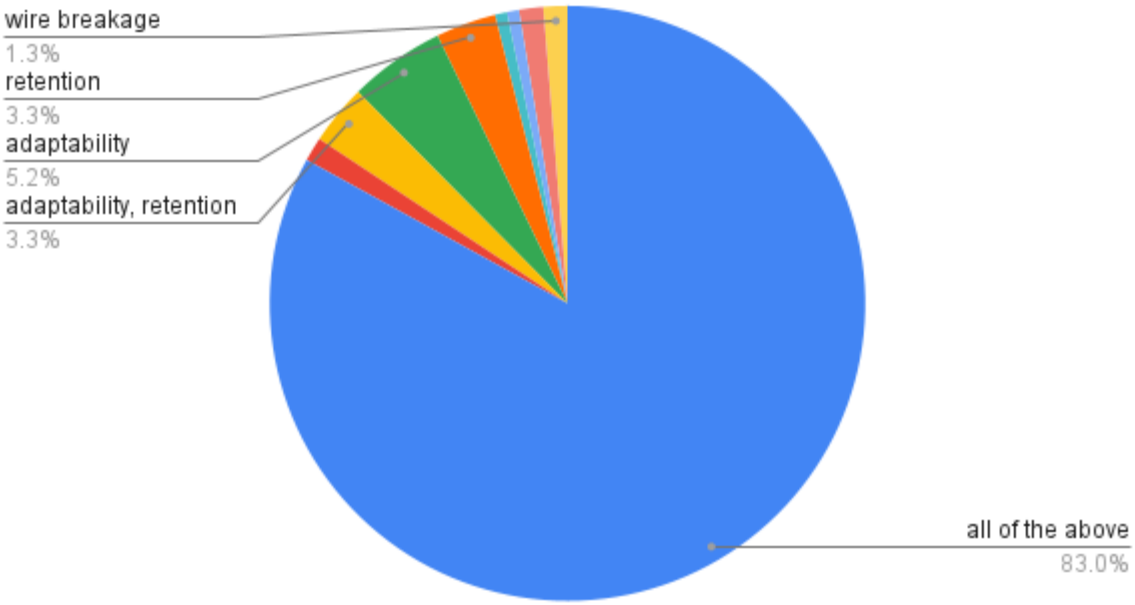


chart 10 :Factors to review in fixed retainers

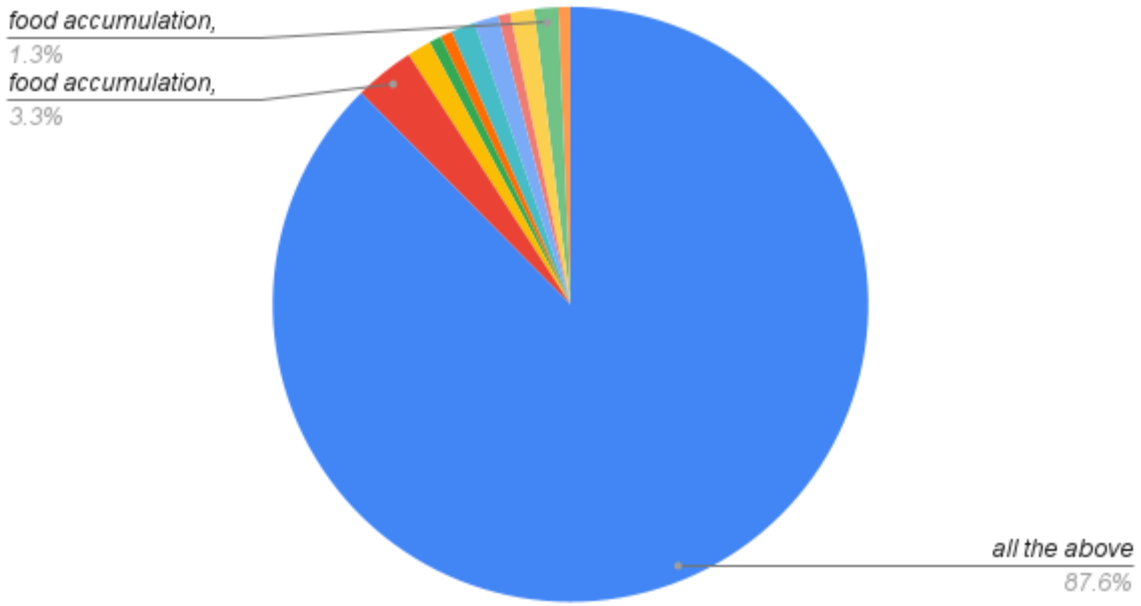
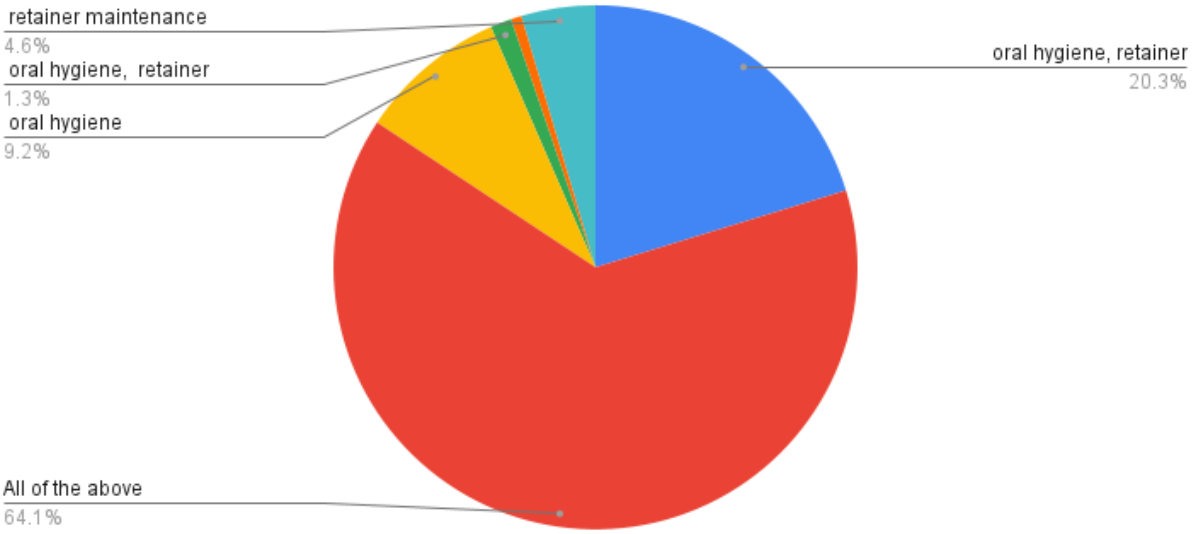
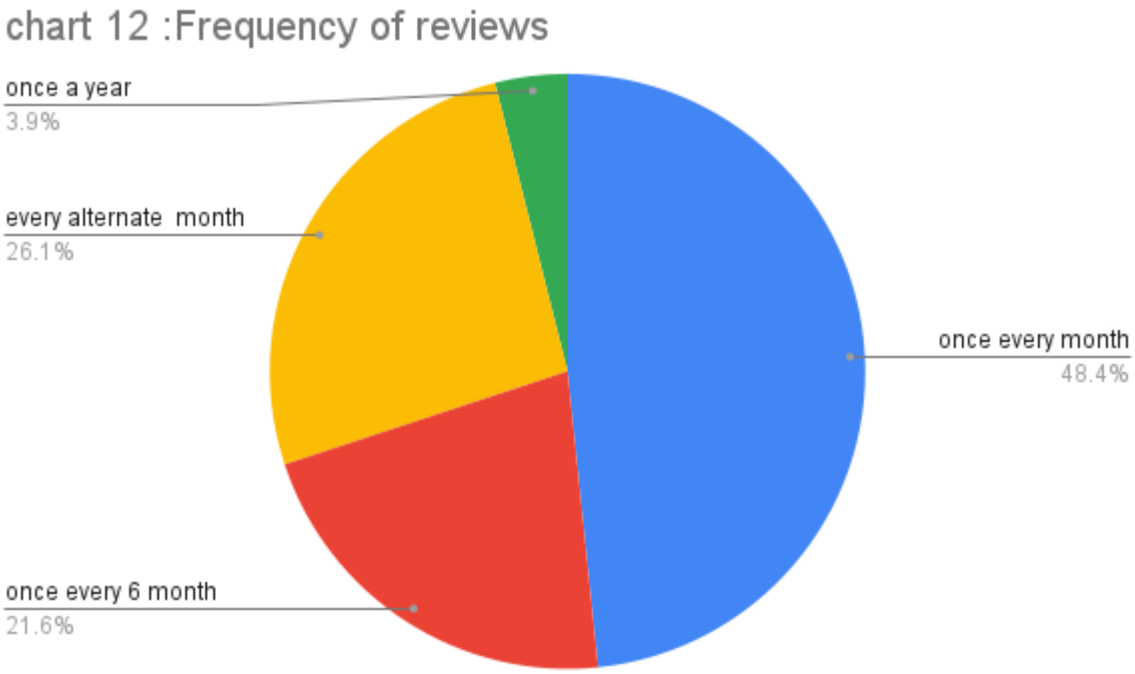
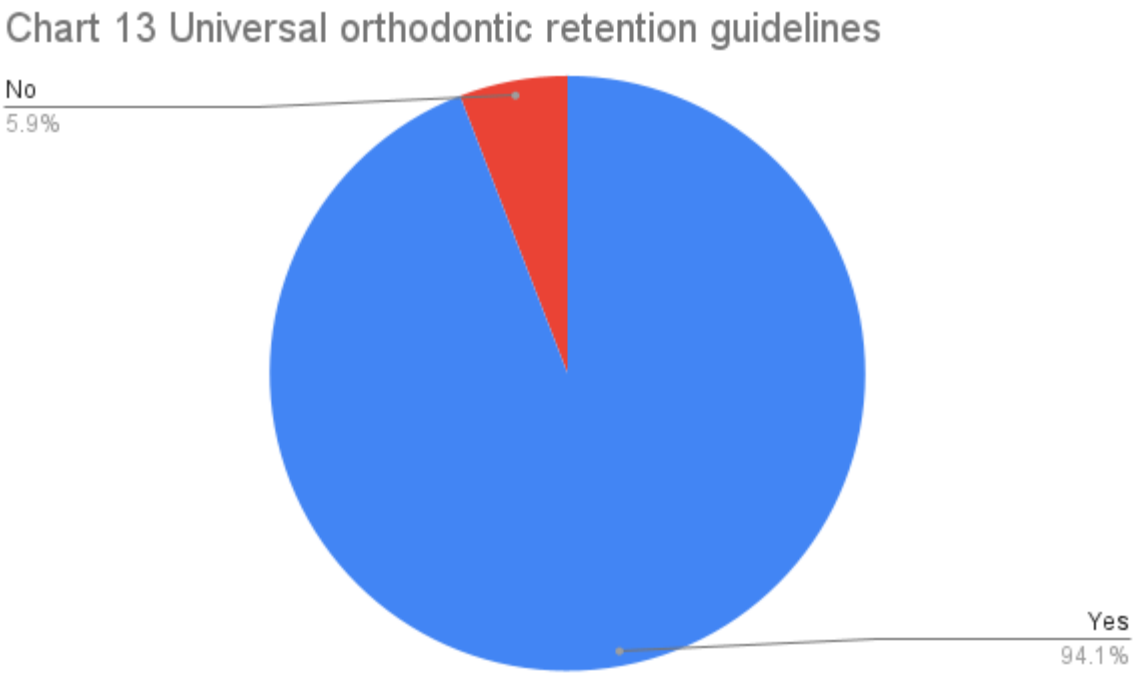


Chart 11 :Instructions after the retainer placement







DISCUSSION

Among the overall responses of 150 participants ,the common preference for the type of retainers was the removable retainers over the fixed retainers. Comparing the removable retainers such as Hawley's and thermoplastic retainers ,the preference was Thermoplastic retainers over Hawley's retainers. Hawley's retainers were most preferred retainer used as observed by Alvyda Andriekute et al. however the responses prove a shift towards the use of thermoplastic retainers(9).There was close range of preferences of hours of wear of retainers by the general dental practitioners and orthodontists. Most of the general dental practitioners and orthodontist preferred a practice of 3-9 months of usage of retainers. A short duration of the use of retainers of about 3-9 months is preferred by the participants of this study which contrast literature which supports the use of a retainers for longer duration(10). There are also studies where orthodontist have preferred for wear of removable retainers for more than 20hrs for 3-9months duration(11).On surveying, the fact that whether extraction influences a retention there is no clear response. On an average the practitioners reveal that age factor of the patient influences the retainers used. On over viewing the practices of the general dental practitioners and orthodontist delivers the retainers within 3 days after debonding and a few range of practitioners

delivers the retainers within the same appointment and within the same week after debonding .There are various factors to check during the review of the patient. There was approximately same range of preferences for the dentrifices and soap and water for cleaning the retainers. The factors to check during the review of the removable retainers are the adaptability, impingement, wire breakage ,and retention of the retainers . Most commonly, the practitioners check for all these factors during their review. Food accumulation, calculus ,bond site and the oral hygiene practices are the common factors checked during the review of a fixed retainer. Usually all these factors are considered during the review by the general dental practitioners and orthodontists. Post insertion instructions for the patient after placement /delivery of the retainers is an important aspect of the general dental practitioners and the orthodontist. The practitioners instruct their patients with regard to oral hygiene, retainer maintenance and nutrition. It is identified that the responders have educated the patients oral hygiene practices in similar studies(12).The review intervals also plays a major factor in the retention protocol, therefore the practitioners prefer the review once every month . As we can see from the responses obtained, there were a wide range of answers for each questions, which shows that there are no proper guidelines for retention protocol or practices.Most of the practitioners accepts the need for a universal guidelines for retention protocol.

CONCLUSION

The survey on various orthodontic retention practices followed by the general dental practitioners and orthodontist concluded that majority of participants preferred a thermoplastic removable type of retainers .They suggested a 3-9 months of wear of retainers for a duration of 12-18 hours a day. Among the factors influencing the retention age of the patient has a major role and no clear suggestion was given on the factor of extraction influencing the retention. The retainers are delivered on a maximum of within 3 days after debonding. On post insertion ,the patients were usually educated a cleaning measure of using dentrifices for maintaining the retainers. On review of removable retainers ,majority practitioners checked for all the factors such as adaptability, impingement, wire breakage and retention of the retainers whereas for a fixed retainers factors such as food accumulation, calculus, bond site, oral hygiene practices were considered .The practitioners commonly reviewed the patients once every month. The general dental practitioners and orthodontists felt that there should be a general guidelines for retention protocol.

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