KAP SURVEY TO ASSESS POPULARITY OF SELF LIGATING SYSTEM AMONG DENTAL CLINICS IN CHENNAI CITY

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ABSTRACT:
Aim: The aim of this study was to assess the knowledge, attitude and practices of treatment methodology and popularity of passive self ligating brackets among dental clinics in Chennai city.

Materials and Methodology: A KAP survey consisting of a questionnaire with questions regarding self ligating brackets was circulated among 40 general dentists and the responses were tabulated and interpreted thereby assessing the popularity of self ligating brackets in the mentioned population.

Results: The results of this survey show that both patients and general dentists find self ligating brackets advantageous in terms of comfort, oral hygiene and treatment duration. Only the affordability was a factor of concern to use the self ligating brackets in practice.

Conclusion: This survey helps us to conclude that the dentists and patients are becoming much more aware about self ligating brackets and their advantages over conventional brackets. Awareness about SLB must be increased and also the affordability could be improved in order to largely increase its size.

Key Words: Self ligating, Conventional ligating, Passive self ligating system, Knowledge and awareness.

INTRODUCTION:
Self-ligating brackets are a group of brackets, gaining popularity in recent years. The first self-ligating bracket, was introduced in the early 1930s. Only in the past decade there has been a renewed emphasis on self ligation with the findings of new types of brackets. These self-ligating brackets are better than the conventional edgewise brackets in many ways.(1)(2)(3). Self-ligating brackets may be active or passive, according to the mechanism by which it closes. The main advantage of self ligating brackets is known to be their claim of reduced friction.(1)(4)(5)(6). This occurs because of absence of conventional methods of ligation and it is said to be known that passive brackets may have reduced friction.(6)(6,7) Since friction is reduced, lesser forces are needed to produce tooth movement and hence they bring about more physiologically harmonious tooth movement as there is no excess powering of the musculature and there is a good vascular supply to periodontium(1) Therefore,better
expansion, lesser anterior proclination, and reduced need for extractions are apparently possible. The other advantages that they claim are firm wire ligation,(8) better anchorage conservation in spite of the sliding mechanics,(9) reduced treatment time, longer intervals of treatment with lesser appointments,(10)(11) less chair-side time,(11)(12)(13)(14)(15)(16) reduced patient discomfort,(2)(3) better infection control,(13) and improved oral hygiene.(14)(15)

Several in-vitro studies assessing the friction and torque in self-ligating systems,(16) have shown that there is reduced friction in self-ligating brackets as compared to the conventional brackets, (4)(17)(5)(18) and, therefore, decreased forces are required to bring about tooth movement.(19)

The aim of this study was to assess the knowledge, attitude and practices of treatment methodology and popularity of passive self ligating brackets among dental clinics in Chennai city.

MATERIALS AND METHODOLOGY:
To assess the popularity of the passive self ligating brackets, a KAP survey consisting of a questionnaire with questions regarding self ligating brackets was circulated among 40 general dentists with varying clinical experience. The questionnaire included various questions about self ligating brackets, their advantages, the clinician and the orthodontist’s perception towards the use of SLB and the patients’ perception towards SLB (Figure 1). The questionnaire was shared in the form of online forms after explaining the study design and it was designed in such a way that one participant can submit a reply only once. The questionnaire was distributed to 40 general practitioners out of which 36 of them answered. The response received for the questionnaire was considered as consent to participate in this study. The participation in this study was completely voluntary and data was maintained confidentially.
RESULTS AND STATISTICAL ANALYSIS:
Data collected was tabulated in Microsoft excel sheets. The descriptive statistics were used to explain the frequencies using SPSS software. Pie chart representations (Figure 2-8) was used to exhibit the various factors assessed in this study.

Figure 1: Questionnaire

Figure 3.
2. Are Self-ligating brackets used in your clinical practice?

- Yes: 55.56%
- No: 44.44%

Figure 4.

3. How frequently are Self-ligating brackets used in your clinical setup?

- Rarely: 10.07%
- Less Frequently: 47.22%
- Frequently: 42.71%

Figure 5.
4. Are you aware of the different types of Self ligating brackets?

- Yes: 65.11%
- No: 34.89%

Figure 6.

5. Do you find Self ligating brackets advantageous over conventional brackets?

- Yes: 26.11%
- No: 13.85%
- Maybe: 50.00%

Figure 7.
6. Do you notice lesser pain perception in patients treated with Self ligating brackets?

- Yes: 47.72%
- No: 27.78%
- Maybe: 25.00%

Figure 8.

7. Do you notice improved oral hygiene in patients treated with Self ligating brackets?

- Yes: 27.78%
- No: 50.33%
- Maybe: 21.89%

Figure 9.
8. Do you feel there is a reduction in the chairside time with patients treated with Self ligating brackets?

Figure 10.

9. Do you feel there is a reduction in the total treatment duration with Self ligating brackets?

Figure 11.
10. Do you think Self ligating brackets prevent the need for extraction?

- Yes: 52.78%
- No: 11.11%
- Maybe: 36.11%

Figure 12.

11. Do you feel affordability is a factor of concern for the patients in choosing self ligating brackets?

- Yes: 0%
- No: 0.44%
- Maybe: 22.22%

Figure 13.
Figure 14.

It was observed that 88.89% of the sample population were aware about self ligating brackets and 11.11% did not have a proper awareness about self ligating brackets. (Figure 2) 58.33% of the sample used self ligating brackets in their dental office, while 41.67% did not use it. 36.11% of the sample used SLBs rarely, while 47.22% used SLBs less frequently. (Figure 3) 63.89% of the sample population were not aware of the different types of SLBs while 36.11% had an idea about the various types. 50% of the sample population felt that the SLBs maybe advantageous over the conventional ligating brackets and 36.11% were sure that the SLBs had an advantage over conventional ligating system. Among the given sample, 47.22% of the dentists felt that their patients may have lesser pain perception with SLBs when compared to CLBs, while 25% found no difference in pain perception among the two groups. (Figure 4) 58.33% of the sample notice improved oral hygiene in the SLB group when compared to the CLB group. (Figure 5) 44.44% of the dentists felt that there was a reduction in the chairside time while using SLBs and 13.89% did not find any difference between SLBs and CLBs. (Figure 6). 41.67% of the sample felt that there may be a reduction in the total treatment duration while using self ligating brackets and 36.11% did not find any drastic difference in the total treatment duration between the two groups. In the given sample, 52.78% felt that the Self Ligating brackets may prevent the need for extraction during orthodontic treatment and 11.11% did not agree with that. (Figure 7) A solid 69.44% of the given sample felt that the affordability was a factor of concern in patients while choosing the Self Ligating brackets and only 8.33% did not feel so. (Figure 8) While asked if the dentists would recommend Self Ligating brackets to their patients, 63.89% of the sample said that they may recommend it based on the type of malocclusion and 8.33% strongly disagreed to this.
DISCUSSION:
The self-ligating bracket was introduced as a fundamental constituent of a low-friction appliance. It is claimed that the low friction combined with this bracket provides faster levelling and aligning, which allows for a reduced interval of appointments and hence decreasing the overall treatment duration, but these findings are not completely reliable and until now there is no strong clinical evidence to support these claims. Awareness of these plays an important role in their use. The level of knowledge and use of Self ligation in the present day was not known and hence this study was conducted to assess the same.

In our study, it was noted that the majority of dentists were aware about the self ligating brackets, but not about the various types of self ligating brackets. There is no awareness among the general dentists about the various types of brackets that have been coming up in the market. Nonetheless, less than half of the sample population used self ligating brackets in their dental clinics.

A vast majority of our sample population felt that the oral hygiene was better in consecutive appointments in the patients with self ligating brackets when compared to the conventional brackets which was similar to the results of the study by Eberting et al.

There are a few studies comparing the chair side time. The results showed a mean of 20 seconds saved for each arch while opening the slide of Damon brackets as compared to removal of the ligature wire in conventional brackets. However, the difference between the time needed for opening and closing of slides and changing the ligatures of conventional brackets was not statistically significant. There are several other studies which show that there is a reduced chair time with self-ligating brackets.

There are three retrospective cohort studies with moderate risk of bias which compared total treatment times. Eberting et al and Harradine found significantly decreased treatment times of 4 to 6 months and 4 to 7 fewer visits with self-ligating brackets, whereas Hamilton et al found no significant difference between the 2 groups. In our study the awareness of this was only partially evident.

It was noted, in our study that affordability was a major factor of concern to the patients while choosing self ligating brackets over conventional ones. The conventional brackets are economically much more patient friendly when compared to the self ligating brackets. The majority of dentists have shown that the main reason for the patients not opting for self ligating brackets in spite of the dentist’s recommendation was the cost factor. The majority of our results point towards the fact that most of the dentists and orthodontists are unsure of the advantages and use of self ligating brackets. This lack of awareness needs to be addressed.

CONCLUSION:
The self ligating brackets are becoming more popular these days and their use is also widespread. But, there is still a lack of knowledge about the various types of self ligating brackets and their advantages over conventional brackets among the general dentists. Hence, there must be enough programmes conducted in order to promote the knowledge about SLBs and therefore use them more effectively to treat malocclusions.

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DECLARATION OF CONFLICTING INTEREST:
The authors declare that there is no conflict of interest.

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