

Assessment Of Knowledge, Attitude and Practice On Treatment Planning For Esthetic Cases Between Specialists and General Practitioners

Research Article

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Abstract

With the development of technology, esthetic dentistry these days has reached new heights. This has led more patients to seek dental treatment to improve esthetics. There are several aspects to be considered while planning esthetic dental treatment which requires a thorough clinical examination and diagnosis. The factors that govern the outcome of esthetic dental treatment comprise both extra oral and intraoral features. These factors aid in the treatment planning which in turn helps predicting the outcome and success of esthetic restorative treatment. This survey aims to assess the knowledge, attitude and practice on treatment planning in esthetic dentistry by specialists and dental practitioners. This survey was carried out by designing a questionnaire containing 15 questions on Google forms which was circulated among dentists. The questions were based on knowledge, attitude and practice on esthetic treatment planning in dentistry. The responses were viewed in M.S. office excel and the results were interpreted, showing a response rate of 63.8%. Analysis showed that the dentists whom the questionnaire was circulated, 87 responded, showing a response rate of 63.8%. Analysis showed that the dentists showed some lack of theoretical knowledge due to which application of concepts to clinical scenarios was moderate. This survey indicated the need for educational intervention to improve the knowledge, attitude and practice on treatment planning for esthetic cases.

Keywords: Esthetic Dentistry; Treatment Planning; Bleaching; Laminates; Veneers; Ceramics.

Introduction

With modernization of technology, esthetic restorative dentistry has reached new horizons which has made patients seek treatment not only for restoration of teeth for form and function but also to attain esthetic appearance [1]. To reach this desired target, dental professionals have to understand the patient's perception of esthetics and the results they desire to achieve in order to plan the treatment [2]. The aspects of esthetic examination that need to be considered for treatment planning include midline position, lip fullness, incisal edge position, occlusion, the desired color change and the shapes of the teeth [3].

The first and the most important consideration is the patient's expectations. It is important for the dentist to understand the patient's esthetic concern prior to treatment planning. Since the esthetic judgement is subjective, dentists should not impose their opinions on the patient [4-6]. After understanding the patient's desires, the dentist should confirm them with a preview technique that includes a direct composite mock up, a wax up or computer imaging [7-9].

Midline discrepancy that is often identified during clinical examination and is believed to commonly occur in 30% of the indi-

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viduals [10-12]. For dental esthetic treatment, attempts have to be made to coincide facial and dental midlines as much as possible in order to achieve an ideal smile [13, 14]. Also lip fullness has to be evaluated as lips guide facio-lingual positioning of the teeth [15-17]. The treatment planning involves classifying lips as thin, medium and thick [18]. This classification would guide the thickness of the restorations for esthetic treatment.

Incisal edge position becomes the most important determinant in smile designing [18, 19]. It dictates the position of the teeth and helps establish the levels of gingiva. Since incisal edge position defines the age of an individual to some extent, its position can be altered to suit the age and achieve desired esthetic outcomes [20, 21]. While carrying out all these alterations, care has to be taken such that the principles of occlusion like anterior guidance and pathways of motion are not violated [22-24].

When the patient desires to have their tooth shape altered, sex and age of the individual has to be looked in to. In order to achieve an esthetic smile, it is important to have symmetry of maxillary incisors [25-27]. When alteration of tooth shape is planned for esthetic correction, symmetry in tooth form and contours of the lateral incisors and canines have also to be established along with buccal corridor gradation [28, 29]. The last and the most common factor for which patients often visit the dental clinic is change in tooth color. There are several treatment options for correction of discolored teeth which ranges from bleaching (vital and non vital) to direct or indirect anterior restorations. The choice of treatment for such cases depends on the status of the teeth being treated [30]. Therefore a thorough clinical examination along with assessment of a patient's desires of an esthetic smile have to be studied for planning the treatment.

Previously our team has a rich experience in working on various research projects across multiple disciplines [31-45] Now the growing trend in this area motivated us to pursue this project.

The aim of this study was to assess the knowledge attitude and practice on treatment planning for esthetic cases between specialists and general practitioners.

Materials and Methods

This cross sectional survey was carried out in the month of April 2020. The participants included both specialists and general practitioners. A questionnaire was designed consisting of 15 questions. The first 5 questions evaluated the knowledge of the dentist regarding treatment planning for esthetic cases while the next 5 questions were designed to assess their attitude towards planning an esthetic treatment. The last 5 questions assessed the application of knowledge and attitude of the dentists in clinical scenarios.

The questions were put up on Google forms which were circulated among 105 dentists of which only 67 responded. The collected data was entered and viewed in MS office excel sheet following which graphical representation and interpretation of results was obtained. Participation of dentists in this survey was voluntary and their data was kept confidential.

Results and Discussion

The survey showed a response rate of 63.8%. Of the 67 responses obtained, 61.2% were from specialists and 38.8% were from general practitioners. The responses to knowledge (Figures 1-4), attitude (Figures 5,6) and practice based questions were plotted in the graph and interpreted.

Esthetic examination is of prime importance while treatment planning of esthetic cases. This involves patients' expectations, midline position, lip fullness, incisal edge position, occlusion, the shapes of the teeth and the desired color change. The dentist

Figure 1. This bar graph represents the responses obtained from dentists regarding the location of facial midline during esthetic treatment planning. There is a statistically significant difference in the response between general dentists and specialists (Chi square value- 7.986; df-3; p value-0.046).

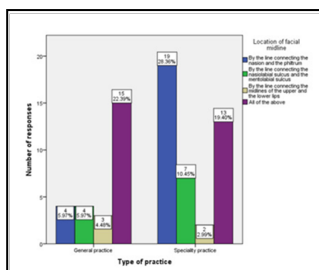


Figure 2. Bar graph shows the various responses for phonetic or speech evaluation chosen by dentists. There is a statistically significant difference in the responses opted by the two groups (Chi square value-9.122; df-2; p value-0.010).

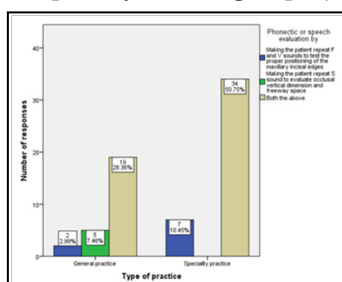


Figure 3. Bar graph denotes the various responses opted by specialists and general practitioners regarding their views on an ideal maxillary and mandibular relationship. There is a statistically significant difference in the responses between the two groups (Chi square value-15.119; df- 2; p value-0.001).

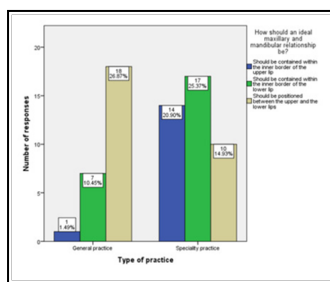


Figure 4. This graph indicates the various responses of the dentists regarding the reason for color discrepancy of veneers. There is a statistically significant difference in the responses between general dentists and specialists (Chi square value- 8.521; df-3; p value- 0.036). This graph infers that failure to bleach the discoloured tooth prior to the placement of veneers, dimensions of veneers as well as tooth preparation are the major reasons for color discrepancy of veneers.

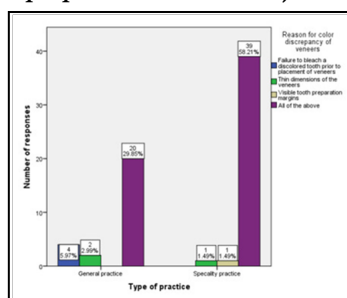


Figure 5. Graph representing the responses of dentists regarding the thickness of the veneers in relation to lip forms. This graph shows no statistically significant in the responses between the groups (Chi square value- 0.981; df- 2; p value- 0.612). Graph also infers that the medium lip form will be the more accepted followed by thin lip forms.

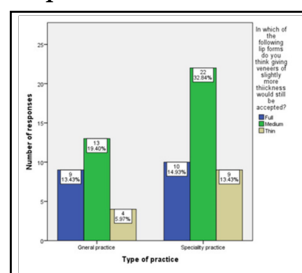
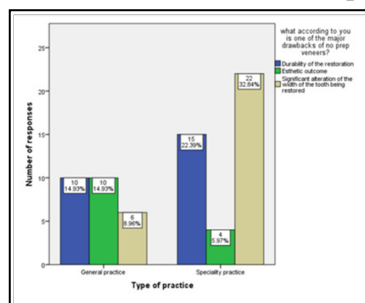


Figure 6. Graph depicting the responses for one of the major drawbacks of no prep veneers. There is a statistically significant difference in the responses between the two groups (Chi square value- 9.850; df- 2; p value- 0.007). Graph reveals that the major drawback of no preparation veneers would be a compromised durability of the veneers.



must always prioritize the patient’s desires and inform them of all the options available prior to treatment planning [46]. Some patients may decline the interdisciplinary approach in treatment planning there by placing limitations on the esthetic results while some would readily agree for multidisciplinary intervention to achieve better esthetic outcomes [3]. No matter what the patient’s preferences are, their consent and requirements must be consid-

ered and a mock up should be done either digitally or manually before finalizing the treatment plan [7].

Midline discrepancies that are often noticed during clinical examination usually go unnoticed by lay people unless the midline has been offcentered by more than 4mm [4]. Although midline discrepancies can be corrected with restorations, severe discrep-

ancies cannot be altered as the gingival tissue would not adjust to severe changes resulting in compromised interproximal tissue health [47, 48].

Another important factor to be considered is the lip fullness. Lips are believed to guide the facio lingual positioning of the teeth [15]. The maxillary incisal profile is set so that it is contained within the inner border of the lower lip which in turn provides adequate closure of the lips [13, 49]. Before altering anterior esthetics, the lips have to be classified as thin, medium and full [59]. Presence of thin lips would alter the lip support and facial esthetics with increase in thickness of the restorative material [3]. Also, while working on anterior esthetics, the length of the anterior teeth have to be evaluated. The patient is asked to pronounce words with “M”, “F” and “V” sounds such that the position of the teeth at rest and the appropriate length of the teeth is established [50, 51].

While working on anterior esthetic cases, care has to be taken such that the principles of occlusion are not violated. In cases where patients desire a change in tooth shape, size and contour, the treatment has to be planned such that the restoration would blend in well with the age and gender of the patient. When working with no prep veneers, it has to be noted that it cannot be used for altering the widths of the teeth being restored [52].

In cases requiring change in the shade of the tooth, various options can be exercised based on the status of the tooth. The most conservative technique for color change of teeth being bleaching, non vital or vital bleaching can be practiced based on the vitality of the tooth. When the tooth shows no response to bleaching, laminates and veneers can be used to mask the underlying discolored tooth and finally a full veneer crown can be planned in teeth with deficient tooth structure or where bleaching, laminates and veneers fail to conceal the discolored tooth. No preparation or minimal preparation veneers are commonly in practice these days are being used for cases that require minimal esthetic correction.

The treatment plan for esthetic cases relies on several factors and has to be well judged during clinical examination to obtain satisfactory results. Our institution is passionate about high quality evidence based research and has excelled in various fields [53-63].

Conclusion

There are various treatment modalities to achieve esthetic outcomes. To achieve a satisfactory outcome, a well designed treatment plan is required that varies with every case and has to be designed based on several extraoral and intraoral factors. This survey showed lack of knowledge among dentists regarding the factors that govern esthetic treatment planning and failure of application of knowledge to clinical scenarios. Further educational intervention is required to improve knowledge, attitude and practice of general dentists in treatment planning of esthetic cases.

Acknowledgements and Declaration

All the authors have equally contributed to this study. There are no conflicts of interest.

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