AESTHETICS AND PATIENT ACCEPTANCE OF DENTAL LAMINATES VARIATION

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Abstract:
Dental veneers have long been used to create the ultimate smile makeover. With this treatment, it's possible to transform crooked, stained, damaged or badly worn teeth into a brand new, straight, white smile, as seen on many of the Hollywood greats. Contemporary direct restorations have significantly evolved since their initial development, allowing clinicians to develop natural-looking restorations. The development of hybrid and microfilled composite materials has further improved the clinician's ability to deliver minimally invasive treatment options. The purpose of this study was to measure the satisfaction of patients with respect to the aesthetics of different tipes of veneers restorations. We also tried to identify potential factors influencing their satisfaction

Key-words: *satisfaction, veneer restorations, reconstruction, esthetics*

Introduction

The purpose of this study was to measure the satisfaction of patients with respect to the aesthetics of different types of veneers restorations. We also tried to identify potential factors influencing their satisfaction. We placed 99 veneers of three types (direct composite, indirect composite and indirect ceramic ones). We asked patients to fill in a questionnaire at placing time, after one month and after six months recall. At baseline the overall satisfaction was 76% and after six months was 89%. The only variable that made a difference was the type of veneer. Patients were most satisfied with the ceramic veneers.

A dental restoration or dental filling is a dental restorative material used to restore the function, integrity and morphology of missing tooth structure. The structural loss typically results from caries or external trauma. It is also lost intentionally during tooth preparation to improve the aesthetics or the physical integrity of the intended restorative material. Dental restoration also refers to the replacement of missing tooth structure that is supported by dental implants.

Improvement of oral health and enhancement of psychosocial well-being are perceived benefits of any dental treatment. Patients have several expectations from dentists, among which, one of great importance is improvement in appearance, self image and social functioning. This is supported by research on general body image witch shows that individuals satisfied with their own physical appearance; tend to be more outgoing, and successful in social contact. (Cash and Fleming, 2002)

Despite agreement amongst professionals about the importance of psychosocial effects of treatment, no psychometric instruments are currently in use to objective assessment of the impact of dental aesthetics on subjective well-being. (Hunt et all, 2002)

Instruments assess health-related quality of life (HRQoL) adress a patient's perspective of the impact of a medical condition on the subjective well-being and every day functioning. (Jokovic et all, 2002)

Most of these items are applicable to orthodontic treatment which is commonly correcting asymptomatic deviations from the aesthetic norm (O´Brien et all, 1998). Prosthetics, on the other hand, is correcting sometimes, more obvious aesthetic problems, making a dramatic change to the form and angulations of frontal teeth.

The Orthognatic Quality of Life Questionaire (OQLO) (Cunningham et all, 2000, 2002) is addressed to subjective impact of orthodontic conditions in young adults. There are no specific items to address to prosthetics and especially, to the expectations of patients, from a prosthetic treatment of the frontal teeth. Therefore, the aim of this study is to contribute to the identification of significant factors that explain to clinicians the expectations of patients from any prosthetic anterior dental treatment (Bos et all, 2003)

Recent studies stipulate that almost one third of adults receiving dental treatment in the European Community are dissatisfied with the aspect of their frontal teeth, in terms of shape, colour, and overall aesthetics. The growing importance placed on aesthetics will subsequently result in an increased demand for cosmetic treatment, therefore, it is important to understand the factors that are crucial for both, clinicians and patients.

A good option to restore unatractive frontal teeth can be, the use of any kind of veneer restoration (dental laminates). The technique of veneering is not new, but the increasing range of materials, both for direct and indirect veneering, makes these technique, a state of art in prosthodontics. The clinical success of frontal veneers is assessed, and can be quantified, by dental clinicians, although, the measurements are subjective and poorly defined.

The most common ways to evaluate restorations is CDA rating (Quantity Evaluation for Dental Care of California Dental Association), or the USPHS criteria (United States Public Health Service Criteria). The parameters employed were mostly surface characteristics, marginal integrity, anatomic form and colour of the restoration. Except for the criteria "colour", these are all objective, mechanical, characteristics and the levels are really easy to quantify. The criteria colour is hard to quantify without the use of colorimetric measurements. (Christensen, 2006)

So, among the USPHS criteria, there is only one parameter that is person dependent, and therefore subjective. (Garber, 1989)

The criteria "patient's satisfaction and aesthetics" are subjective, they depend not only from person to person, but are dependant on professional interest, age, level of education etc. According to Nordbø, in a 1994 study, veneers are a satisfactory prosthetic approach to frontal teeth aesthetic, for 96% of his patients, regardless of age and social background.

Objectives

1. In this study we investigated, which would be the most important criteria for the population sample that we choose as a sample group; the criteria were: colour, shape, and overall aesthetics.
2. We tried to asses the time period that a patient needs to integrate a new frontal veneer (a new aspect of the upper frontal teeth) as his own teeth.
3. We also tried to investigate to what extend the frontal veneers that we performed, could enhance the bio-psycho-social potential of an individual.
4. We tried to asses the relationship between the patient's opinion and the doctor's opinion concerning the aesthetics of the veneers and its psycho-social implications.

Methods and materials

This analysis was a clinical trial that tried to asses, the type of veneers that satisfy best both, the clinician and the patient, it also tried to clarify the most important criteria for patient evaluation of frontal veneers. The patient's satisfaction with their veneers was assessed using questionnaires with preceded categories. The patients were asked to fill in the questionnaires at placing time, one month after placement and at six month recall. The veneers were different from the point of view of material and technique of fabrication according to Table I.

99 Veneers	28 direct: GC Gradia, EMPRESS DIRECT
	13 indirect: ADORO (RESIN COMPOSITES)
	58 ceramics EMPRESS 2 (DENTAL CERAMICS)

Table I. Types of restoration depending on material

Procedures

The veneers were placed by the same dentist over a 4 year time period, the demand for treatment was about 100% and it matched the treatment need. The amount of aesthetic change may have influenced the level of satisfaction of the patients, however the dentist's judgement (objective need) matched the patient demand (subjective need), so the treatments had both aesthetic and functional role. Table II shows a comparison between doctor's and patient's opinion concerning several aesthetic aspects of the restorations.

In some cases a protocol deviation occurred. In these situations teeth suffered some mechanical trauma and the initial treatment plan

changed, in order to obtain the best colour match. In all these cases the operator changed the decision to make a composite veneer and performed a ceramic all coverage veneer.

Results

Although the indications (discoloration, deviation of shape and deviation of colour) for treatment varied, in about 85% of the cases, there was an agreement between the dentist and patient (Table II).

Dentist	Patient		
	No reason	Reason	Total
Colour			
No reason	55	43	44
Reason	1	78	56
Total	24	75	99
Shape			
No reason	87	10	88
Reason	19	79	12
Total	78	21	99
Position			
No reason	90	10	69
Reason	49	51	31
Total	76	23	99

Table II. Agreement between dentists and patients assessment of treated teeth (%)

For the composite veneers, most of the satisfaction percentages at the first recall were significantly higher than at baseline, for all variables, while at the second recall the percentages were significantly lower for overall satisfaction and colour as shown in Table III.

28 Veneers	
Overall aesthetics	Degrees between 8 – 10
Colour	Degrees between 7 – 10
Shape	Degrees between 8 – 10
Veneers made with Gradia - 10	
Overall aesthetics	9 – 10
Colour	8 – 10
Shape	8 – 10
Veneers made with Charisma - 18	
Overall aesthetics	9 – 10
Colour	9 – 10
Shape	9 – 10

Table III. The degree of patient's satisfaction with direct veneers

One month after placing the composite veneers the overall satisfaction about the restoration was 76% with only one patient dissatisfied, the rest were not sure about their judgement. The other factors we tried to emphasise: reason for treatment, sex, age, procedure problems had no significant influence on the satisfaction of the patients.

As for the overall aesthetics it seems that the doctors are more critical than the patients about the outcome of their treatment, but the amount of satisfaction was comparable in both, doctor and patients as shown in Table IV.

Doctor		Patient		
		Placement	One month	Six months
Colour	90 veneers	95 veneers	92 veneers	90 veneers
Shape	96 veneers	98 veneers	90 veneers	98 veneers
Overall aspect	92 veneers	99 veneers	95 veneers	99 veneers

Table IV. The correspondence between patients' and doctors' opinion

Discussion

Evaluation of the aesthetics of teeth or the dentition is a complex process. Any restored tooth will be judged in relation to the whole dentition. Every change in shape will take some time for patient to adjust and to integrate it "as his own". So, a patient usually needs to adjust to new restorations, the process can take up to six months (Crispin, 2004).

The results that we obtained showed a better satisfaction rate at one month and six months recall. The slight changing in satisfaction of the patients with resin veneers may derive from the fact that the resin composites loose their luster and change in colour due to resin "ageing" (Souza, 2010).

Conclusions

From the results of this study, we can conclude that differences in clinical procedures, which are longer in ceramic veneers, have no influence on patients' satisfaction and also no influence had sex and age.

The most important factors, for both, young and mature, patients were colour and shape of the veneers. As the population sample consisted in young and mature adults, it seems

that the most important aspect of dental aesthetics for Romanian adults is the colour.

The amount of satisfaction was better at six months recall for both shape and colour, for the ceramic veneers. This fact makes us believe that the average time period a patient needs for integrating a frontal veneer is one to six months.

The amount of satisfaction decreased in resin veneers from one month to six months but the change was not statistically significant. In a further longer study, it may be expected that the influence of the material from wich the veneers are made of, will be the only variable to consider.

The degree of satisfaction and the enhancement of psycho-social potential could be assessed only subjectively, as we did not apply any special questionnaire concerning this aspect. Al patients declared that they feel better with the veneers than they felt prior to their placement

The concordance between doctor and patient opinion is a continuous debate, a frontal restoration, although has a main aesthetic role, has a functional role also, an aspect that the patient almost never takes into consideration. We, as practitioners should consider first function, and only after function is at it's best, we should consider aesthetics. But as the aspect of doctor patient relationship is concerned we are obliged to meet both demands, in order to have satisfied patients.

Limitations

A main problem could be related to selecting subjects and experimental design. The amount of bias in this study can be explained by the fact that, the resin veneers and ceramic veneers have higher costs so they address to limited segments of population. Another aspect can relate to the fact that these veneers are mainly aesthetic restorations and the population they address to are young and mature individuals with some social status, not necessarily an objective sample lot.

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