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# ASSOCIATION OF AGE AND GENDER PREVALENCE IN PATIENTS UNDERGOING AESTHETIC CORRECTIONS USING VENEERS

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**Abstract**

***Aim:*** *The aim of the study was to find out the association between the age and gender distribution in patients undergoing veneering treatment.*

***Materials and Methods:*** *Patients who reported for esthetic management of teeth and for whom veneering treatment had been done in Saveetha Dental College and Hospitals, Chennai from June 2019-March 2020 were recruited. A total of 156 direct and indirect veneers were done among the reported patients. Data regarding age, gender, tooth number and reason (spacing, discolouration or both) for need of esthetic treatment were collected and analyzed.*

***Results:*** *Out of 156 patients, most (71.2%) of the patients belonged to the age group between 20 to 40 years. Gender distribution of patients showed 37.8% of the patients were females and 62.2% of the patients were males. 48.7% of the patients reported with the complaint of spacing Also, association between gender and reason for veneering treatment and age and reason for veneering treatment were found to be statistically significant.*

***Conclusion:*** *Within the limitations of the study, the age group between 20-40 years reported the maximum for veneering treatment (71.2%). Among the gender, males (62.2%) reported with a higher incidence than females (37.8). Spacing (48.7%) was the most common reason for patients undergoing veneering treatment.*

**Keywords:** *Discolouration; Spacing; Veneering.*

## Introduction

While the invention of veneering anterior teeth by Dr Pincus [1] was presented in 1937, it became more popular in the mid-1970s, using three different approaches: direct bonding using resin composites, prefabricated composite veneers, and indirect, custom-made porcelain veneers. [2–4] In the past few years, patient requests for esthetic treatment of anterior teeth have increased. [5]

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Dental caries is the most common cause for the loss of enamel in a clinical situation. Dental caries are easily detectable and reversible at an early stage. [6] Many clinical situations such as tooth discoloration, extensive fractures, malaligned teeth or dental caries lesions may cause an important impairment in esthetic appearance and smile harmony, causing impact in the quality of life. [7,8] Dental trauma is one of the most commonly seen injuries in the general population involving teeth and other surrounding structures. [9] If a patient only reports with chipped teeth or localised defects, veneers are usually the material of choice due to a conservative, esthetic approach as they are tooth coloured restorations in order to give the patient a perfect smile. [10] The use of veneers may be an interesting option to restore the esthetic appearance of damaged teeth, [11] especially because indirect techniques require more removal of sound tooth structure and have a higher cost, due to the laboratory procedures involved. [12]

Universally, the following clinical situations are considered indications for anterior restorations: 1) Enamel hypoplasia, waves, stains, grooves, etc, 2) Enamel abrasions, 3) Congenital amelogenesis imperfecta, 4) caused by hormones or tetracyclines, 5) Chromatic or dystrophic alterations caused by fluorosis, 6) Numerous esthetically unsatisfactory superficial restorations, 7) Coronal fractures located primarily on the palatal side, 8) Retention of deciduous teeth with a resorbed root, 8) Lateral incisor agenesis, when the canine has transposed to that position, 9) Volume anomalies (microdens), 10) Diastemas, and 11) Alignment defects [13]

Diagnosing the exact pulpal status by direct examination is uncertain due to the fact that the pulp is enclosed within a hard tissue. In order to identify the actual pulp status surrogate test must be performed. [14] These tests must be performed before planning for a veneer. Restorative aesthetic dentistry should be practiced as conservatively as possible. Currently, the use of adhesive techniques makes it possible to conserve as much tooth structure as is possible while satisfying the patient's restorative demands and aesthetic needs. With indirect restorations, clinicians should choose a material and technique that allows the most conservative treatment; satisfies the patient's aesthetic, structural, and biologic requirements, and has the mechanical requirements to provide clinical durability. [15]

Today, this evolution is clinically represented by the choice of direct and indirect techniques. Direct techniques are one session procedures performed chairside by directly applying resin composite to the dental surface. They are used for simple restorations using an anatomic layering procedure, which aids the clinician in correctly defining the color and shape of the tooth, using the residual dental structure as reference. [16]

Indirect techniques demand at least two sessions and the collaboration of a dental technician, who will manufacture a veneer to be luted to the prepared dental surface. Indirect techniques are preferred in more complex cases, in which restoring harmonious tooth shape and color is highly dependent on variables such as the clinician's skill and the technique and material used. Further, it should be considered whether the patient will more or less be compliant about a prolonged session. [17,18] The advantages offered by indirect techniques compared to direct techniques are as follows: [19] Superior esthetic result, adequate abrasion resistance, biocompatibility with soft tissues, dimensional and chromatic stability over time and strong bond between the two adhesive interfaces (luting agent/etched enamel and luting agent/etched porcelain or post-polymerized resin composite).

Previously our team had conducted numerous clinical and invitro studies, [20–25] reviews [26–29] and surveys [30] in the last 5 years. Now, we are focussing on epidemiological surveys. The idea for this study stemmed from the current interest in our society. The aim of this study was to find out the association between the age and gender distribution in patients undergoing veneering treatment. It also highlighted the reason why the patients had come.

## MATERIALS AND METHODS:

The study setting for this study was a university setting. Patients who reported for esthetic management of teeth and for whom veneering treatment had been done in Saveetha Dental College and Hospitals, Chennai from June 2019 to March 2020 were recruited in our study. A total of 156 direct and indirect veneers were done among the patients reported. Cross verification of data was done using photographs. Data was reviewed by an external reviewer.

Data collected included name, age, gender, tooth number and reason (spacing, discolouration or both) for need of esthetic treatment. The collected data was tabulated using microsoft excel and analysed using SPSS. Differential (frequency distribution and percentage) and inferential (chi-square test) statistics were done.

**RESULTS:**

Our study included 156 veneering treatment procedures done between June 2019 to March 2020. The ages were grouped into 4 categories: below 20 years, between 20 to 40 years, between 40 to 60 years and above 60 years. 11.5% of the patients belonged to the age group of below 20 years, 71.2% of the patients belonged to the age group between 20 to 40 years, 5.8% belonged to the age group between 40 to 60 years and 11.5% of the patients belonged to the age group of above 60 years. (Table 1)

Gender distribution of patients showed 37.8% of the patients were females and 62.2% of the patients were males. (Table 2)

Also, the reason for undergoing veneering treatment was recorded. 41% of the patients reported with the complaint of discolouration, 48.7% of the patients reported with the complaint of spacing and 10.3% of the patients reported with the complaint of both spacing and discolouration. (Table 3)

Association between age group and reason for veneering treatment showed that in the age group of below 20 years, 5.13% reported with a complaint of discolouration and 6.41% of the patients reported with a complaint of spacing. In the age group between 20 to 40 years, 24.36% reported with a complaint of discolouration, 36.54% reported with a complaint of spacing and 10.26% of the patients reported with complaints of both spacing and discolouration. In the age group between 40-60 years, spacing was the only complaint (5.77%) and in the age group of above 60 years, discolouration was the only complaint. (11.54%) Chi-square test was done and the association was found to be statistically significant. ($p = 0.00$) (Figure 1)

Association between gender and reason for veneering treatment showed that among females, 10.26% of the patients reported with a complaint of discolouration and 27.56% of the patients reported with a complaint of spacing. Among males, 30.77% reported with a complaint of discoloration, 21.15% reported with a complaint of spacing and 10.26% reported with complaints of both spacing and discoloration. Chi-square test was done and the association was found to be statistically significant. ($p=0.00$) (Figure 2)

| Age | | Number of patients | Percentage |
|---|---|---|---|
| Valid | Below 20 Years | 18 | 11.5 |
| | 20 to 40 Years | 111 | 71.2 |
| | 40 to 60 Years | 9 | 5.8 |
| | Above 60 Years | 18 | 11.5 |
| | Total | 156 | 100.0 |

Table 1 shows the age distribution of patients who had undergone veneering treatment. 11.5% of the patients belonged to the age group of below 20 years, 71.2% of the patients belonged to the age group between 20 to 40

years, 5.8% belonged to the age group between 40 to 60 years and 11.5% of the patients belonged to the age group of above 60 years.

| Gender | | Number of patients | Percentage |
|---|---|---|---|
| Valid | Female | 59 | 37.8 |
| | Male | 97 | 62.2 |
| | Total | 156 | 100.0 |

Table 2 shows the gender distribution of patients who had undergone veneering treatment. 37.8% of the patients were females and 62.2% of the patients were males.

| Reason | | Number of patients | Percentage |
|---|---|---|---|
| Valid | Discolouration | 64 | 41.0 |
| | Discolouration + Spacing | 16 | 10.3 |
| | Spacing | 76 | 48.7 |
| | Total | 156 | 100.0 |

Table 3 shows the reason for undergoing veneering treatment. 41% of the patients reported with the complaint of discolouration, 48.7% of the patients reported with the complaint of spacing and 10.3% of the patients reported with the complaint of both spacing and discolouration.

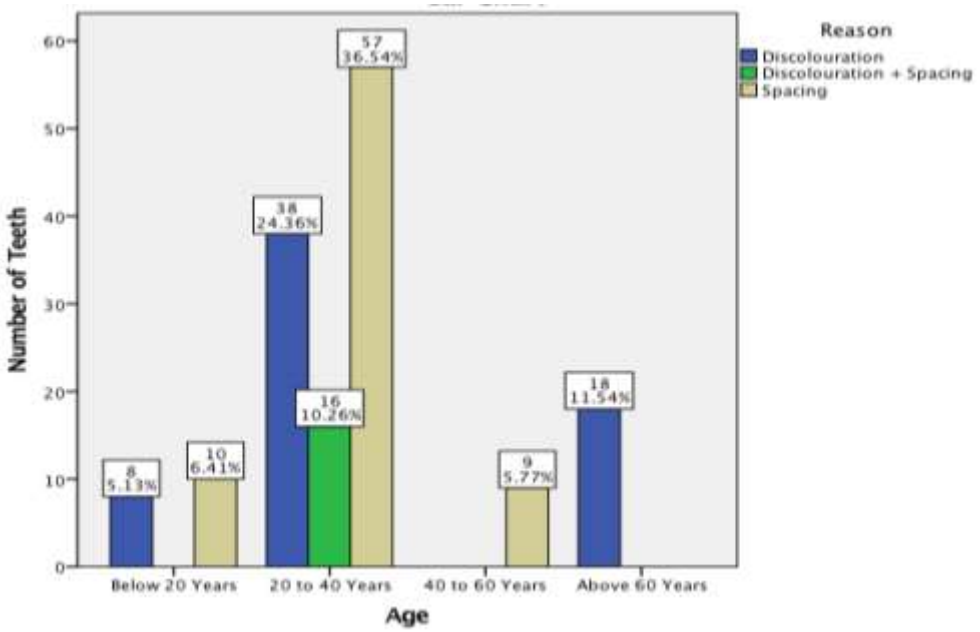


Figure 1 shows the association between age and reason for veneering treatment. X axis represents the age group and Y axis represents the number of teeth. Blue colour denotes discolouration, green colour denotes discolouration and spacing and beige colour denotes spacing. In the age group of below 20 years, 5.13% reported with a complaint of discolouration and 6.41% of the patients reported with a complaint of spacing. In the age group between 20 to 40 years, 24.36% reported with a complaint of discolouration, 36.54% reported with a complaint of spacing and 10.26% of the patients reported with complaints of both spacing and discolouration. In the age group between 40-60 years, spacing was the only complaint (5.77%) and in the age group of above 60 years, discolouration was the only complaint. (11.54%) Overall, spacing was the most common reason in the age group between 20-40 years. Chi-square test was done and the association was found to be statistically significant. Pearson's Chi-square value = 40.696, p value 0.00 (<0.05), statistically significant.

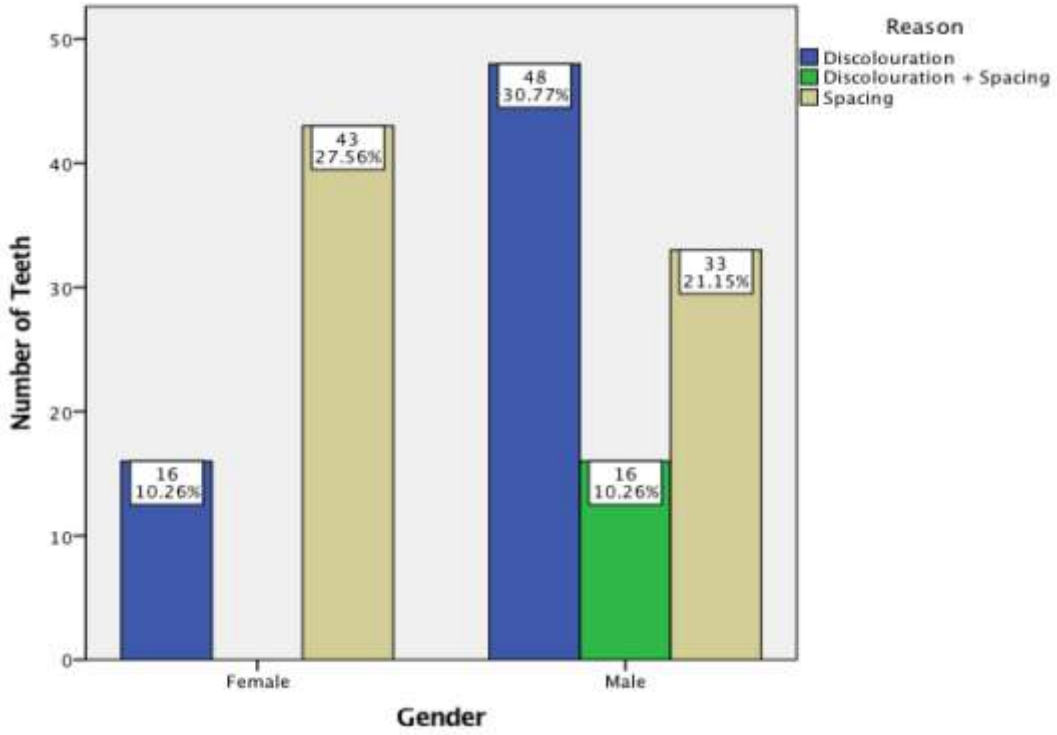


Figure 2 shows the association between gender and reason for veneering treatment. X axis represents the gender and Y axis represents the number of teeth. Blue colour denotes discolouration, green colour denotes discoloration and spacing and beige colour denotes spacing. Among females, 10.26% of the patients reported with a complaint of discolouration and 27.56% of the patients reported with a complaint of spacing. Among males, 30.77% reported with a complaint of discoloration, 21.15% reported with a complaint of spacing and

10.26% reported with complaints of both spacing and discoloration. Overall, spacing was the most common reason among females and discolouration was the most common reason among males. Chi-square test was done and the association was found to be statistically significant. Pearson's Chi-square value = 25.577, df = 2, p value 0.00 (<0.05) hence statistically significant.

## DISCUSSION:

This study assessed the association of age and gender with veneering treatment. The reason for veneering treatment also was taken into consideration. Age group between 20 to 40 years reported the maximum for veneering treatment (71.2%) and the age group between 40 to 60 years reported the least for veneering treatment. (5.8%) Males (62.2%) reported with a higher incidence for veneering treatment than females. (37.8%) Taking the reason into consideration, spacing (48.7%) was the most common reason for patients choosing veneering treatment followed by discolouration. (41%) Only 10.3% of veneers fabricated were for both discolouration and spacing. In the age group between 40-60 years, all the patients reported with the complaint of spacing and all patients above 60 years reported with the complaint of discoloration.

In a retrospective study done by Coelho et al on Direct anterior composite veneers in vital and non-vital teeth, [31] 196 restorations were evaluated in 86 adult patients (mean age 44 years old), with an overall success rate of 80.1%. The majority of patients were females (69.8%). 83.2% of veneers were placed in upper central incisors. Almost 80% of the evaluated veneers were performed using universal composites and 73% of the restorations were placed in vital teeth.
Study done by Meijering et al on Patient's satisfaction with different types of veneer restorations, [32] highlighted the reasons for veneer treatment. The reason 'shape' and 'position' were more important for the dentist than for the patient, while the reason 'colour' was more important for the patient.

Study done by Burke et al on Ten-year outcome of porcelain laminate veneers placed within the general dental services in England and Wales, [33] 1177 different adult patients were identified who had received porcelain veneers, of whom 410 (35%) were males and 767 (65%) were females. A number of patient factors were found to influence veneer survival. Veneers perform least well in patients over the age of 60, with reasons for this potentially being deteriorating periodontal condition, increased loading because of reduced posterior support, or reduced salivary flow as a result of the prescription of a variety of medications. Similar findings are apparent for directly placed restorations. [34]

Study by Dunne et al on clinical performance of porcelain veneers, age, gender, fabrication technique (platinum foil or refractory die), use of rubber dam and year of bonding were not significant factors. [35]
The limitations of our study were that it was an institutional based study, the duration of cases taken into account was only 1 year and limited sample size. Future scope includes taking larger populations into account, populations from different geographical variations, checking for success versus failure rates and patient satisfaction after veneering procedures.

## CONCLUSION:

Within the limitations of the study, patients between the age group of 20-40 years (71.2%) reported to the maximum for veneering treatment. Among the gender, males (62.2%) reported with a higher incidence than females (37.8%). Also, spacing (48.7%) was the most common reason for patients undergoing veneering treatment.

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## AUTHOR CONTRIBUTION:

Sahil Choudhari carried out the retrospective study by collecting data and drafted the manuscript after performing the statistical analysis. Subash Sharma aided in the conception of the topic, participated in the study design, statistical analysis and supervised in preparation of the manuscript. Jaiganesh Ramamurthy participated in the study design and coordinated in developing the manuscript. All the authors had equally contributed in developing the manuscript.

## CONFLICT OF INTEREST:

There was no conflict of interest as declared by the authors.

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