Perception of a Perfect Smile: Do Specialists See Beauty Differently?

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Abstract:

a) **Introduction:** A pleasant smile creates a lot of impact in day-to-day life. Smile aesthetics has become primary objective of any dental treatment. This study aims to evaluate and compare perceptions of smile among dental specialists, ultimately fostering comprehensive approach to smile enhancement and patient satisfaction.

b) **Materials and Methods:** A cross-sectional survey was conducted among all licensed orthodontists, endodontists, periodontists, and prosthodontists across Guntur District. A validated structured questionnaire was distributed.

c) **Results:** Most dentist informed us that, regarding smile correction, the 1st point of contact for their patients was an orthodontist (52%) followed by general dentist (43%). . The dentists acknowledged the role of all these multidisciplinary specialists in coming together to get a perfect smile for the patient. **Our study results showed that among all specialist the long-term noticeable smile improvements were successfully being delivered time & time again by an orthodontist.** The specialist suggested that going by the future trends, it obviously seems that in near future the cosmetics dental treatment will become more accessible to the general public & all future innovations in technology will play a major key role in reducing the gap between the specialist & general population.

d) **Conclusion**: Each dental specialty contributes uniquely to smile aesthetics, and their perceptions vary based on their training and clinical experience. Understanding these differences lead to comprehensive treatment planning and better patient satisfaction. A collaborative approach incorporating the strengths of each specialty is essential for achieving most aesthetically pleasing and functionally sound smiles

Keywords

Smile aesthetics, Orthodontist, Interdisciplinary dentistry

Introduction

Facial aesthetics play a significant role in human social interactions, with the smile being one of the most impactful and sought-after features. A smile serves as a powerful non-verbal communication tool, influencing perceptions of attractiveness, self-esteem, confidence, and approachability[1,2]. In modern society, a pleasing smile is often associated with good health and emotional well-being[3]. As such, smile aesthetics have become a primary objective in dental care, with increasing numbers of patients seeking treatments that enhance their smile[4].

Dental specialists are integral to the development and maintenance of an aesthetically pleasing smile, with each specialty contributing from its unique perspective. Orthodontists aim to achieve proper alignment and occlusion, fostering symmetry and balance[5.] Endodontists focus on the preservation of natural dentition through root canal therapy, maintaining dental structure and function[6]. Periodontists address the health and contour of gingival tissues, which frame the teeth and influence overall smile aesthetics[7]. Prosthodontists restore damaged or missing dentition using prosthetic solutions that ensure both function and aesthetic appeal[8].

Smile analysis is a fundamental component of facial evaluation in dental practice. However, the perception of what constitutes an ideal smile is inherently subjective and influenced by cultural, personal, and professional factors[9.] Notably, differences in smile perception are also evident among dental professionals themselves. For instance, orthodontists may prioritize dental alignment and symmetry, while periodontists may emphasize gingival health and contouring. In contrast, prosthodontists might focus on tooth size, proportion, and color, and endodontists may value the retention of natural teeth as a core aesthetic principle[10,11.]

These variations in perspective highlight the need for interdisciplinary collaboration to achieve optimal aesthetic outcomes. Understanding how different dental specialties perceive smile aesthetics can lead to more holistic treatment planning and improved patient satisfaction.

Therefore, the present study aims to evaluate and compare the perceptions of a better smile among orthodontists, endodontists, periodontists, and prosthodontists. By identifying the aesthetic priorities of each specialty, this study seeks to promote a more unified and comprehensive approach to smile enhancement.

Aim

To evaluate and compare the perception of a better smile among orthodontists, endodontists, periodontists, and prosthodontists.

Objectives

1. To assess the aesthetic preferences of each specialist in terms of smile design.
2. To determine the role of alignment, gum health, and tooth structure in the perception of an ideal smile.
3. To analyse the influence of each specialty's treatment approach on their perception of dental aesthetics.
4. To establish a consensus on the essential components of an attractive smile

Materials &Methods:

Study Design
This study employed a descriptive cross-sectional survey design. The survey was targeted at four dental specialties most directly involved in smile enhancement procedures: orthodontics, periodontics, endodontics, and prosthodontics. The study was carried out in Guntur District, Andhra Pradesh, India, over a period of three months (from [insert start date] to [insert end date]).

Study Population and Sample Selection
The sampling frame consisted of all licensed orthodontists, periodontists, endodontists, and prosthodontists practicing in the district. A list of eligible specialists was obtained from the local branch of the Indian Dental Association (IDA) and verified through the State Dental Council registry.

- Inclusion criteria: Specialists with a minimum of one year of clinical experience in independent practice or institutional settings.
- Exclusion criteria: General dental practitioners, postgraduate students under training, and specialists not directly involved in smile-related procedures (e.g., oral surgeons, pedodontists).

A total of [insert number] specialists fulfilled the criteria, and all were invited to participate. Participation was voluntary, and written informed consent was obtained.

Questionnaire Development and Validation
A structured questionnaire was designed based on previous literature on smile aesthetics and expert input from a panel of three orthodontists, two prosthodontists, and one periodontist. Content validity was established through expert review, and face validity was tested on a pilot sample of 10 specialists not included in the final study. Reliability was assessed using Cronbach's alpha (α = [insert value]), indicating acceptable internal consistency.

The final questionnaire comprised three sections:

1. Demographic information (age, gender, specialty, years of practice).
2. Perceptions of smile aesthetics assessed using multiple-choice and 5-point Likert scale items.
3. Visual assessment task in which participants evaluated digitally manipulated smile photographs varying in parameters such as gingival display, midline shift, and incisal inclination. Each photograph was rated on a 5-point attractiveness scale.

Data Collection Procedure
Questionnaires were distributed both in paper format during local dental society meetings and electronically via email and WhatsApp groups. Two reminder messages were sent at one-week intervals to improve response rates. Completed responses were anonymized and coded for analysis.

Ethical Considerations
Ethical clearance was obtained from the Institutional Ethics Committee of [insert institution name] (Approval No: [insert number]). The study followed the ethical guidelines outlined in the Declaration of Helsinki (2013 revision).

Data Analysis
All data were entered into SPSS software version 30 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including mean and standard deviation (SD), were calculated for continuous variables, while frequencies and percentages were calculated for categorical variables.

- Group comparisons: One-way ANOVA was used to compare mean ratings among the four specialties, followed by post hoc Tukey tests for pairwise comparisons.
- Categorical responses: Chi-square tests were employed to identify differences in distributions across groups.
- Multivariate analysis: A univariate general linear model was applied to examine the effect of specialty, years of practice, and gender on perceived smile attractiveness, as well as to test for interactions between these factors.

A p-value <0.05 was considered statistically significant.

Results:

In our Study the participating specialist from all 4 branches were equally given an invitation to reduce dominance of 1 speciality over the other. Around 70% participants were female & Pg students. We had purposefully included more females in our study due to the basic assumption that females are not Aesthetically Equipped to Deal with matters of smile. Most of the participants were PG students & hence had clinical experience upto 5 years, who believed that they had a good expertise over the subject of Smile. The participants also agreed that even tough during their academic education they had a reasonable exposure about this topic, they have gained more knowledge & Expertise only during their further Clinical Interaction & experience with their patients.

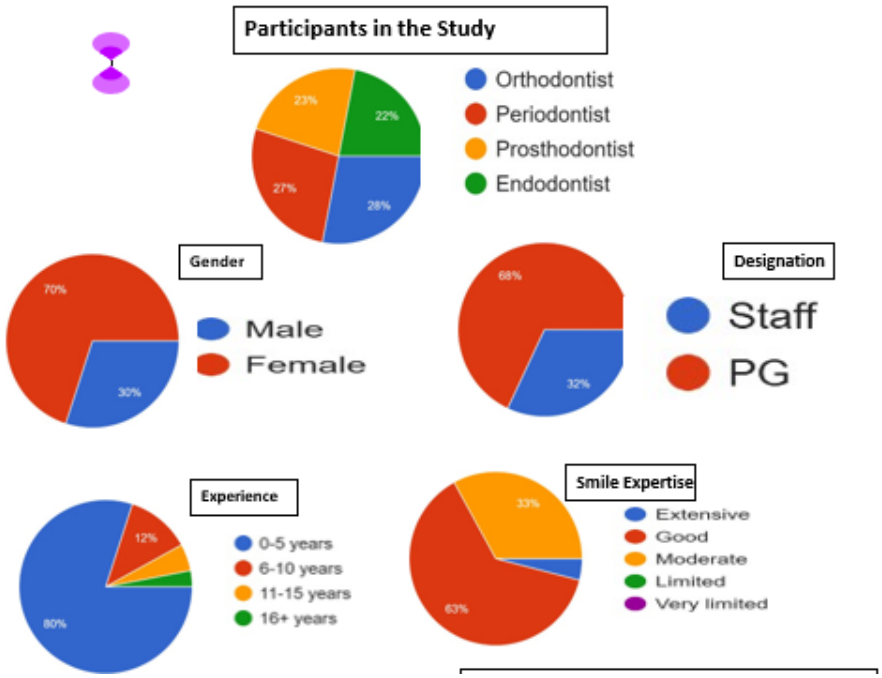
The participants answered the questions asked in our present study based their knowledge, understanding of the subject along with the inputs obtained from their patients during their entire tenure as clinician. They all agreed that in more than 75% cases they do evaluate smile & its components. These interactions have made them all to come to a conclusion that despite all variabilities among the patients, there is still an existence of “Ideal Smile” in the society. They all commonly agree that smile is multifactorial with a P value of 0.019 which is statistically significant & this smile is heavily skived by the influence of gender.

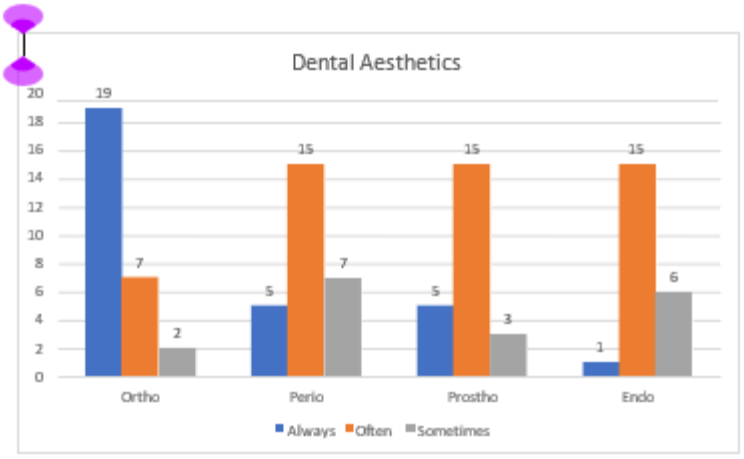
The participants all agreed that this ideal smile is a result of complex interaction between alignment of teeth, symmetrical / proportional teeth which are in proper harmony with the subject’s face (40% response which is statistically Significant) while also maintaining healthy Gums & whiteness of the enamel. The other factors which also contribute to determine ideal smile are lips thickness, shape size & colour of the teeth, colour & extent of gingival exposure. They also highligtened that factor like hypodontia, diastema, gingival gummy smile, crowding & various types of malocclusions are totally unacceptable to an ideal smile. All specialist agree that their patients were influenced by not only their own belief but also opinions of their family, friends, peers & public social media advertisements. Whatever doubts they had during the decision making, was clarified by the interactions with their treating specialist dentist. 77% of patients reported that they prefer to choose aesthetic need for correction of their malocclusion as compared to its functional need, because they were concerned that their social smile bothered them during every social gathering & made them insecure.

As depicted in fig 3, more than 98% subjects highligtened the importance of smile during social gatherings & get togethers. A good smile always boosted their self-confidence which in turn help them boost their quality of life. During the course of orthodontic treatment most patients also underwent Endodontic Teeth whitening & minor adjunctive periodontal / prosthodontic procedures to enhance the Quality of their smile.. They even gave feedback & discussed with their treating specialist about their teeth form, shape, visibility, symmetry, amount of gingival display, smile arch, lip line, etc.

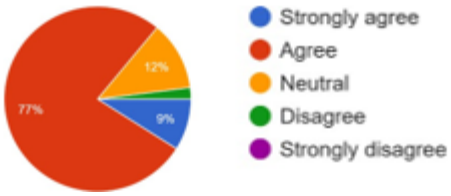
They clearly stated that if excessive gum was displayed during smile, or incompetent lips, abnormal teeth size & shape, irregular teeth, spacing between teeth, missing teeth were all negatively influencing their social behaviour. Even the treating specialist dentist, after all these years of experience have confessed that they perceive their own smile to have a couple of minor pitfalls & they would / have wished to corrected it also.. After the completion of orthodontic treatment, most patients underwent further smile enhancement & designing procedures to improve their social visibility. These procedures included beaching, crown lengthening, use of veneers, and also insisted to get their smile aesthetics checked by using Artificial intelligence smile software's.

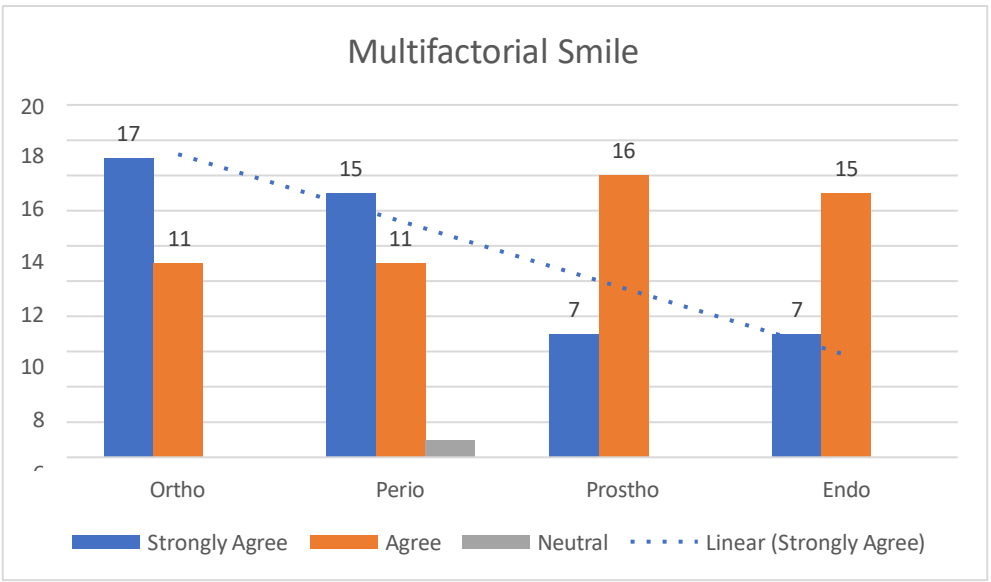
Most of the dentist informed us that, regarding smile correction, the 1st point of contact for their patients was an orthodontist (52%) followed by general dentist (43%). (Fig 5). The dentists acknowledged the role of all these multidisciplinary specialists in coming together to get a perfect smile for the patient. Our study results showed that among all specialist the long-term noticeable smile improvements were successfully being delivered time & time again by an orthodontist. . The specialist suggested that going by the future trends, it obviously seems that in near future the cosmetics dental treatment will become more accessible to the general public & all future innovations in technology will play a major key role in reducing the gap between the specialist & general population.



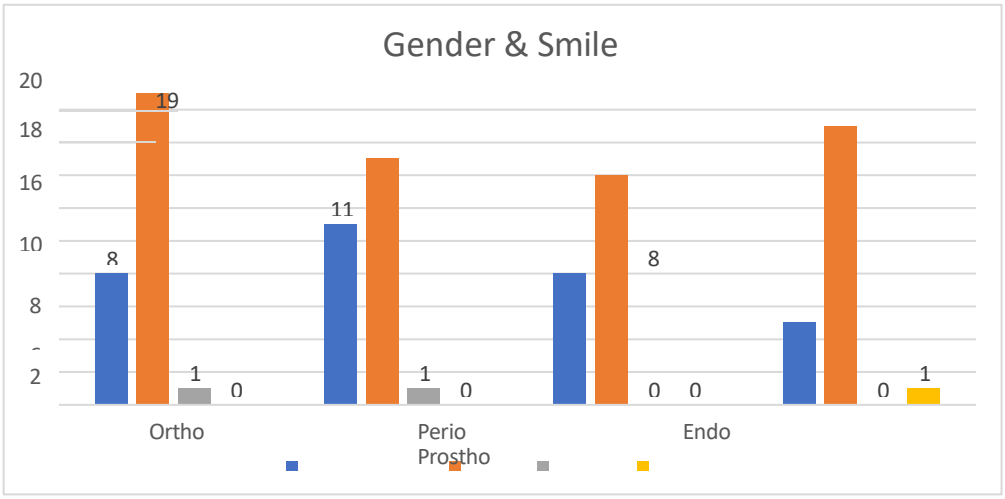


Graph 1: How frequently do you assess a patient's smile in your practice

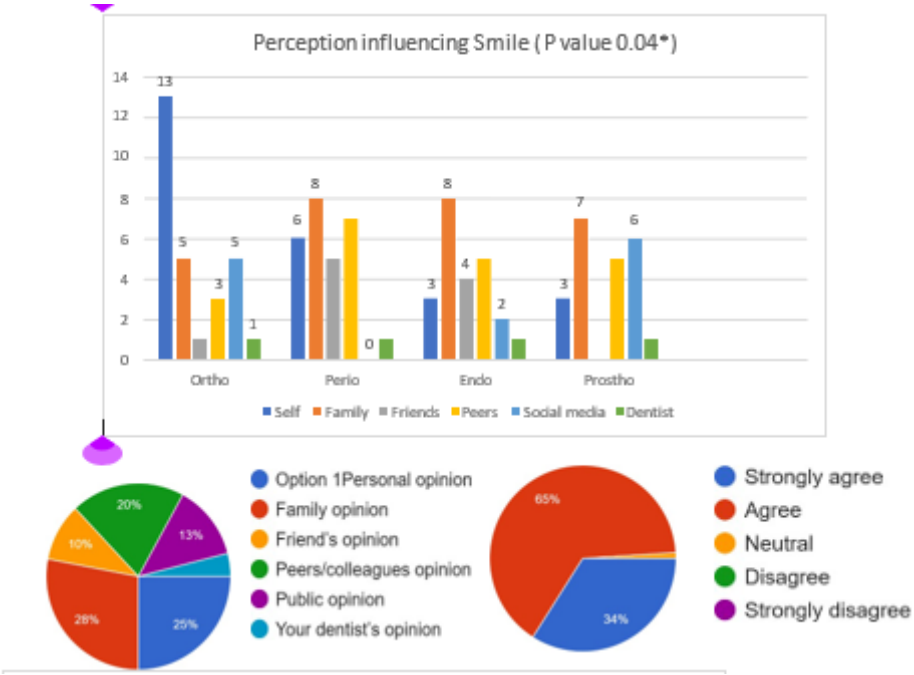


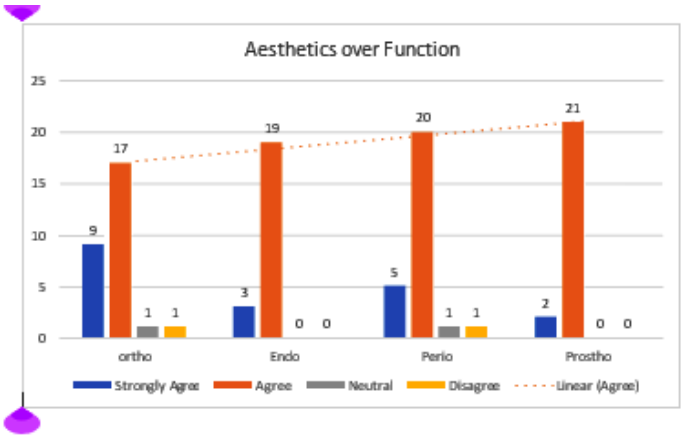


Graph 2: Smile is multifactorial (P value 0.019*)

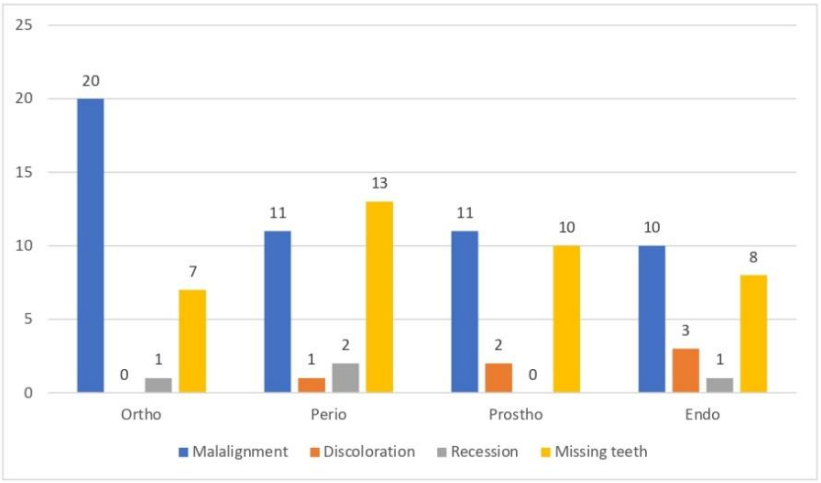


Graph 3: Gender plays a role in smile evaluation (p Value 0.605)

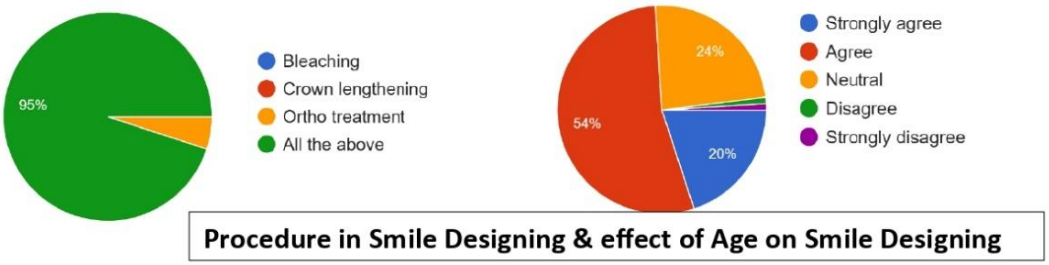




Patient Choose aesthetics over function when seeking smile enhancement (P value 0.41)

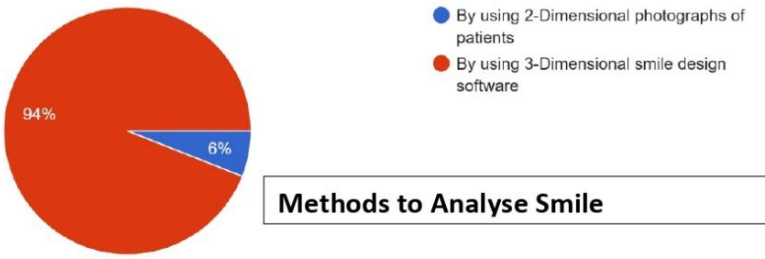


Graph 6: Aetiology for smile Correction (P value 0.26*)

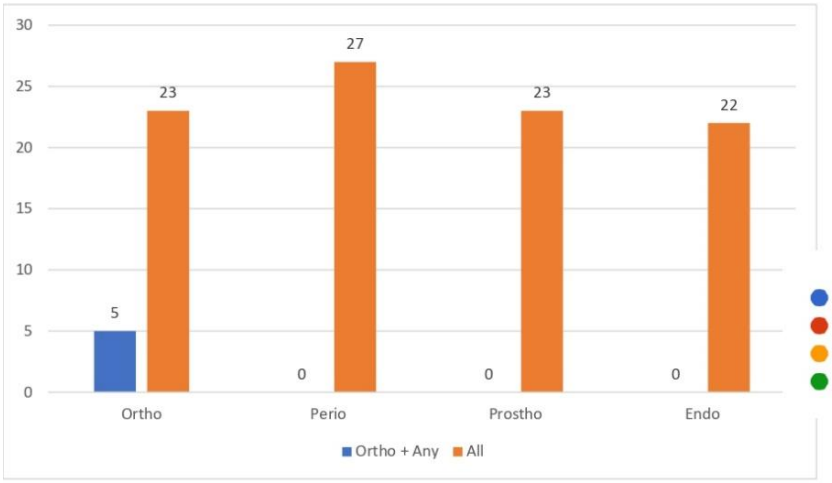


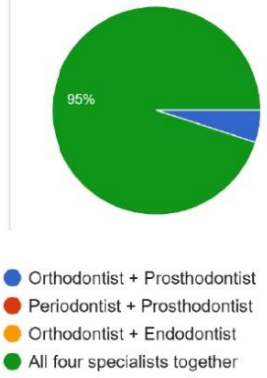
Procedure in Smile Designing & effect of Age on Smile Designing

Principals of Smile designing & affects of Digital Dentistry on Smile Designing

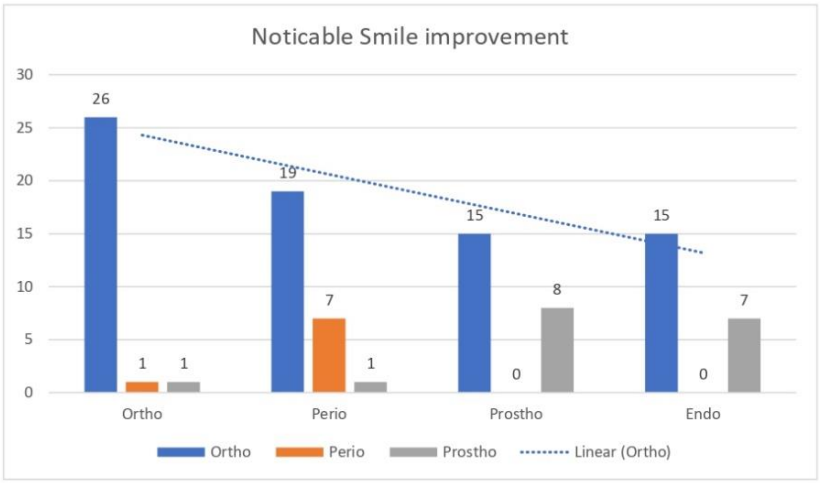


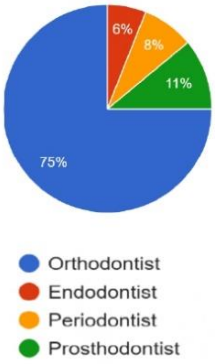
Methods to Analyse Smile



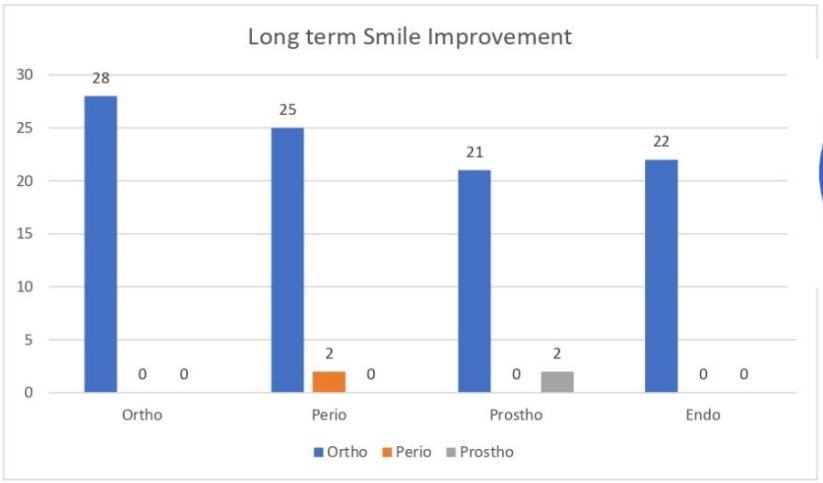


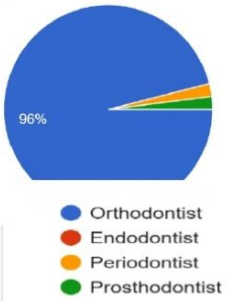
Graph 7: Multidisciplinary Partnership (P value 0.004*)





Graph 36: Noticeable Smile Improvement (P value 0.0*)





Graph 37: Long term Smile Improvement (P value 0.056)

Discussion

Cultural and ethnic backgrounds significantly influence the perception and preference of smile aesthetics. Comparative studies have shown distinct differences in smile variables among various populations. Jayaratne et al. compared U.S. Caucasians, U.S. American Asian Indians, and Indians residing in India, revealing considerable variation in aesthetic preferences across these groups [12]. Buccal corridor space was more favorably perceived by U.S. Indians and Indians residing in India than by U.S. Caucasians. Similarly, both ideal and minimum smile arcs were preferred by the Indian groups. Although maximum and ideal gingival display preferences were consistent across all three groups, a minimal gingival display was more favored by the U.S. Indian and Indian populations. Notably, subtle differences were still observed between U.S. Indians and those residing in India, indicating a potential influence of cultural and geographic environment on aesthetic judgment [12].

In another cross-cultural study, McLeod et al. evaluated smile characteristics such as buccal corridor, gingival display, occlusal cant, maxillary midline deviation, and lateral-central gingival discrepancy between U.S. and Canadian populations. Clinically significant differences were found in nearly all variables except buccal corridor width, with Canadian participants being more critical in their assessments than U.S. participants [13].

Further research has revealed diverse aesthetic standards among German, Russian, and Turkish populations, particularly concerning gingival display and smile arc perception [14]. These findings underscore the necessity for region-specific studies to establish culturally sensitive aesthetic norms. However, limited literature is available concerning smile esthetic preferences among populations of the northern and central regions of the Arabian Peninsula [15]. This gap highlights the need for focused regional research to guide more culturally aligned orthodontic and prosthetic treatment planning.

Numerous studies have explored the impact of dental aesthetics on self-perception and social acceptance. Orthodontists primarily focus on aligning teeth and correcting malocclusions, thereby improving overall smile symmetry. (Fig 5) Endodontists contribute by preserving natural dentition through root canal treatments, ensuring the health and longevity of teeth. Periodontists emphasize gum health, which significantly impacts the appearance of a smile, while prosthodontists restore missing or damaged teeth using crowns, bridges, dentures, and implants. Studies indicate that interdisciplinary collaboration among these specialists' results in the most effective aesthetic and functional outcomes, which exactly matches with all the results of our study.

According to Sarver & Ackerman (2003), orthodontic treatment plays a crucial role in smile design by ensuring proper tooth alignment and occlusion, which contributes to an aesthetically balanced smile [16]. Kokich et al. (1999) highlighted that different dental specialists have varying perceptions of smile aesthetics, with orthodontists focusing on symmetry while periodontists emphasize the importance of gum contour [17]. Both these theories were accurately substantiated by our study.

Chu et al. (2010) explored the role of prosthodontics in smile design, emphasizing that tooth proportion and restoration are key factors in achieving a natural and harmonious smile [18]. The study by Pinho et al. (2012) demonstrated that periodontists consider optimal gingival architecture essential for a pleasant smile, influencing treatment planning decisions significantly [19]. Furthermore, Levin (1978) introduced the concept of the "Golden Proportion"

in dental aesthetics, which remains an important guideline in prosthodontic and orthodontic treatments to enhance the smile's appeal [20]. These studies underscore the necessity of interdisciplinary collaboration for achieving ideal smile aesthetics.

Smile analysis is an integral part of the overall facial analysis carried out by dental specialties. Assessing patient's smile allows the clinician to see what needs to be done, what can be done, and what should be accepted. A smile analysis includes assessing variables such as the amount of the incisors and gingiva show upon smiling, the smile arc (parallelism between the maxillary incisal edges and the lower lip), tooth proportions, gingival height and contours, relationship between the dental midline and facial midline, and tooth shade and color . An aesthetically pleasing smile is dependent on the harmony and symmetry between these variables. Currently, the demand for smile aesthetics is growing; being thus, various smile variables need to be taken into consideration

A smile which appears beautiful in the first instance might not be in the second instance. This plays a significant role in determining the threshold level of acceptable deviations in different variables responsible for making a smile pleasing and attractive. Most of the studies assessing the smile aesthetics have assessed the variables only once and have determined the threshold levels based on them. This might not be the true representation of the threshold. Hence, scoring the same smile variable more than once might show the actual threshold level.

The perception of a better smile varies significantly among dental specialists, reflecting the priorities and treatment approaches unique to each discipline. Orthodontists, for instance, often emphasize the importance of dental alignment, occlusion, and symmetry in smile aesthetics. Their training focuses on creating harmonious proportions by straightening teeth and correcting bite discrepancies, which can enhance both function and appearance. A well-aligned dental arch is typically associated with an attractive smile, making orthodontic treatment a cornerstone in smile enhancement. Moreover, among the dental professionals, the orthodontists are more analytical than the general dentist. This is due to the special training of orthodontist to observe and evaluate features that do not seem to influence the general dentist and the public.

Endodontists, on the other hand, prioritize the preservation of natural teeth. While they may not directly modify smile aesthetics in the same way as orthodontists or prosthodontists, their role in maintaining tooth vitality is crucial. A healthy, intact natural tooth contributes significantly to a patient's overall smile. Endodontists understand that retaining the natural dentition with proper endodontic therapy is preferable to extraction and replacement whenever possible. Their perspective on smile aesthetics is grounded in maintaining the biological and structural integrity of the teeth.

Periodontists focus on the health and aesthetics of the gums, which serve as the foundation of an attractive smile. Gum contour, symmetry, and overall periodontal health play a crucial role in framing the teeth and enhancing their appearance. Excessive gingival display (gummy smile) or gum recession can significantly affect smile aesthetics, making periodontal interventions essential in achieving an ideal smile. Periodontists emphasize the need for healthy, proportionate gingival architecture to complement well-aligned and properly restored teeth.

Prosthodontists, who specialize in restorative dentistry, view a better smile through the lens of tooth replacement, restoration, and prosthetic rehabilitation. They prioritize factors such

as tooth shape, size, colour, and proportion, ensuring that dental restorations blend seamlessly with natural dentition. Prosthodontic treatments like veneers, crowns, bridges, and implants are designed to enhance both function and aesthetics, particularly in patients with missing or severely damaged teeth. Their approach to smile aesthetics involves meticulous attention to detail in recreating natural-looking restorations that align with the patient's facial structure

Smile aesthetics is influenced by measurable dental–facial parameters, cultural norms, and professional training. Evidence shows cross-cultural variability: for example, Canadian and U.S. laypersons, or U.S.-based versus India-based Indian raters, differ in their tolerance for buccal corridor, smile arc, and gingival display.[21–23] Middle Eastern studies further confirm region-specific norms, particularly for gingival display, emphasizing the need for localized guidelines.[24]

Among key smile variables, the smile arc consistently contributes to perceived youthfulness, while gingival display has a well-defined but culturally moderated threshold of acceptability. Buccal corridor remains controversial, with preferences varying by face type and population.[21],[25] Midline shifts and occlusal cants are less noticeable to lay observers than to dental specialists, guiding realistic clinical thresholds.[26] Tooth proportions and the Golden Proportion continue to inform aesthetic planning, albeit as flexible heuristics rather than rigid rules.[27]

Professional and lay perspectives diverge: orthodontists value alignment and symmetry, periodontists prioritize gingival contour, prosthodontists emphasize tooth form and proportion, and endodontists focus on conservation.[28] Such inter-specialty differences underline the importance of interdisciplinary, culturally sensitive treatment planning for optimal aesthetic outcomes.

Conclusion

Each dental specialty plays a distinct and essential role in the enhancement of smile aesthetics, with their perceptions influenced by specific training, clinical experience, and treatment priorities. Orthodontists focus on alignment and occlusion, periodontists emphasize gingival health and contour, endodontists prioritize tooth preservation, and prosthodontists address tooth form and restoration. These varied perspectives often result in differing aesthetic ideals among specialists. Recognizing and understanding these differences is crucial for developing comprehensive, patient-centred treatment plans that address both functional and aesthetic goals. An interdisciplinary, collaborative approach—drawing upon the strengths and insights of each specialty—is essential to achieving smiles that are not only visually pleasing but also functionally stable and long-lasting..

Conflicting Interest (If present, give more details): NIL

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