Smile Design Wheel™: A practical approach to smile design

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Modern trends in cosmetic dentistry and media coverage of smile makeovers have increased public awareness of dental aesthetics. People now know that smile aesthetics plays a key role in their sense of well-being, social acceptance, success at work and in relationships, and self-confidence. The aesthetic expectations and demands of dental patients have increased substantially. Now, a glowing, healthy and vibrant smile is no longer available only to millionaires and movie stars. Therefore, many dentists are incorporating various smile design protocols in their daily practices to meet the increasing aesthetic demands of their patients.

Smile aesthetics

A smile is a facial expression that is closely related to the emotions and psychological state of a person. A smile is exhibited by the observer as a reaction to the smile of the observed person. Perception, however, in smile aesthetics is based on personal beliefs, cultural influences, aesthetic trends, and fashion, and input from the media. Hence, smile aesthetics is a multifactorial issue, which needs to be adequately addressed for any aesthetic treatment. The objective beauty of a smile can be established with the application of various principles of smile design, and the creation of subjective beauty may enhance cosmetic value.

Smile design

Smile design has been defined in various ways in the literature; I would like to summarise it as follows: “Smile design is a systematic process governed by the psychology, health, function and rules of natural aesthetics to bring about some changes in soft- and hard oral tissue within anatomical, physiological and psychological limitations, thereby creating a positive influence on the aesthetics of a person’s face and personality as a whole.”

We all appreciate a beautiful smile when we see it, but it is difficult to explain exactly what makes a smile beautiful. It is evident that each smile is different and particular to each individual. An impaired smile on the other hand, has been associated with high incidences of depression.

Aesthetics deals with objective and subjective beauty. Objective beauty is based on the appreciable properties possessed by the object itself. However, subjective beauty is relative to the perception and emotion of the observing person. Perception, however, in smile aesthetics is based on personal beliefs, cultural influences, aesthetic trends and fashion, and input from the media. Hence, smile aesthetics is a multifactorial issue, which needs to be adequately addressed for any aesthetic treatment. The objective beauty of a smile can be established with the application of various principles of smile design, and the creation of subjective beauty may enhance cosmetic value.

Step 1: Understand—The pyramid of psychology

According to Prof. Robert A. Baron, psychology is best defined as the science of behaviour and cognitive processes. Behaviour deals with any action or reaction of a living organism that can be observed or measured. Cognitive processes deal with every aspect of our mental life: our thoughts, memories, mental images, reasoning, decision-making, and so on, in short: with all aspects of the human mind.

Smooth design, we normally try to understand the second part of psychology, i.e. the human mind or rather the minds of our patients. There are three fundamental zones we consider in detail for the psychological pyramid assessment: perception, personality and decision.

Perception

Perception is the process through which a person can see, process, organise and interpret input from their sensory receptors. A person cannot imagine beauty and aesthetics without any input, in advance. The media is the most common source of information in present day society. The media is the most common source of information at present regarding beauty and aesthetics. A patient usually comes with his or her own perception of smile aesthetics based on his or her own personal beliefs, cultural influences, aesthetic trends within society and information from the media.

Dentists need to communicate with their patients to determine such information during the initial consultation, which helps in understanding the patient’s perception of the treatment result.
use of questionnaires, visual aids, such as previous clinical cases or smiles of various celebrities, can aid immensely in this process.

Personality

According to the human psychology, personality is an individual’s unique and relatively stable pattern of behaviour, thoughts, and emotions. It is to be noted that each patient’s problem or concern should be comprised of his or her personality with respect to his or her personality type. According to Roger F. Levin, there are four personality types:

- Driven: This type of person focuses on results, makes decisions quickly, dislikes details or paperwork, and likes to have a good time.
- Amiable: People with this personality type are attracted by people with similar interests, fear consequences, are slow in decision-making, react poorly to pressure, are emotional and slow to change.
- Analytical: This type of person requires endless details and information, has an inquiring mind, is highly exacting and emotional. This type is the most difficult to convince and take the longest to reach a decision.
- Desire: Desire is a subjective component. Increased public awareness of smile aesthetics through the media has led to a rapid increase in patients’ desires and levels of expectation. Patients are now willing to pay for the enhancement of their smile aesthetics. Therefore, the ethical responsibilities of cosmetic dentists in identifying the need or want-based desires of patients have also increased. The desires and levels of expectation in every patient with respect to the different aspects, the establishment of patient satisfaction is closely related to these aspects. Hence, understanding the pyramid of psychology is an integral aspect in smile design.

Step I: Establish—The pyramid of health

The pyramid of health is divided into three zones:

1. General health, specific health and denotive gingival health.
2. The health pyramid assessment and management play a vital role in most cases, as patients may have certain limitations owing to their health, like uncontrolled metabolism, disease, poor bone structure, poor oral hygiene, tooth decay, long-term medication, etc., which should be addressed prior to functional and aesthetic treatment.

The health pyramid assessment process includes patient history (medical, dental, nutritional), examination (extraoral, intraoral and investigation techniques, pug vitality test, study models’ analysis). Various types of questionnaires and clinical examination and investigation protocols can be used to obtain the necessary information relating to the patient’s health. The clinician can use this information to prepare a personalised treatment protocol. All three components of the pyramid of health should be established within normal limits before starting any aesthetic restorative procedure on a patient.

Step II: Restore—The pyramid of function

Function is related to force and movement. Hence, for the pyramid of function assessment, the existing occlusion, comfort and phonetics are properly evaluated with the evaluation of para-functional habits, level of comfort during chewing and deglutition, and temporomandibular joint movement. The clarity of normal speech and pronunciation are also examined. The level of comfort and phonetics components of the functional pyramid should be restored and maintained at an acceptable level before starting the treatment of any aesthetic component.

Step IV: Enhance—The pyramid of aesthetics

The pyramid of aesthetics is the last but most sensitive pyramid of the Smile Design Wheel, as aesthetics has both subjective and objective aspects. The assessment of the subjective aspects—perception, personality, desire—is carried out during the pyramid of psychology assessment. The assessment of the objective aspects depends on the distance from the focal length used to visualise the aesthetic component. Hence, the aesthetics pyramid can broadly be divided into major zones:

- Macro-aesthetics
- Micro-aesthetics

Macro-aesthetics

Macro-aesthetics deals with the overall structure of the face and its relation to the smile (Fig. 2). To appreciate the macro-aesthetic components of any smile, the visual macro-aesthetic distance should be more than five feet. However, in clinical practice the assessment of the macro-aesthetic components is done using various facial photographs, with semantic and mathematical appraisals, using reference points and their interrelation. Various facial reference points and guidelines are used for aesthetic assessment for orthognathic and facial cosmetic surgery; however, in smile design the following macro-aesthetic guidelines are considered fundamental:

- Facial midline;
- Lip commissures height;
- Incisal embrasures; and
- Principle of golden ratio.

Micro-aesthetics

Micro-aesthetics deals with the fine structure of dental and gingival aesthetics (Fig. 4). Mini-aesthetics can be appreciated at a visual micro-aesthetic distance of less than two feet or within normal make-up distance. For the clinical assessment of micro-aesthetic components of the teeth and gingival tissue, appropriate illumination and magnification tools are required for intra-oral examination. Necessary clinical intra-oral photographs should be taken for documentation and future reference.

For micro-aesthetics, the detail of the individual tooth structure and its relation to the surrounding gingiva and the adjacent teeth should be analysed. The following are the major points to be considered:

- Incisal edges; and
- Gingival zenith.

To achieve higher patient satisfaction and long-lasting treatment results, the following should be the sequence in any smile design procedure: proper comprehension of psychological aspects, the establishment of health and the restoration of function within its normal limit and the subsequent enhancement of aesthetic components.

Conclusion

Today, various protocols of smile design are available in cosmetic dentistry. However, most clinicians wish to use the simplest protocol with the most predictable results. It is to be noted that smile design should always be a multifactorial decision-making process that allows the clinician to treat patients with an individualised and interdisciplinary approach.

The Smile Design Wheel presented in this article clearly indicates the most important components (PHPA pyramids) of smile design, their clinical significance and sequence to be maintained during the smile design procedure. I believe that the Smile Design Wheel is a simple and practical tool in smile design that can help the clinician to easily comprehend the ‘complex’ smile design procedure.

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