

Prudential analysis of methods in the selection of teeth for complete denture



The selection of teeth for complete denture was significant for many years. Several thoughts and philosophies were proposed for teeth selection. From the initial years to advance technology the concerns were in terms of simple, easy, and accurate selection of teeth for edentulous situations.

The initial thoughts of anterior teeth selection were based on theories, ratios, and computational methods. Several concepts such as Tupal form theory, Berry's biometric ratio method, Clapp's tabular dimension table method, Valderrama's molar tooth basis, Wavrin instrumental guide technique, Wright's photometric method, Myerson's multiple-choice method, House instrumental method, Stein's coordinated size technique, Sears anthropometric cephalic index method, Justin's Frame harmony method, Selection indicator instrument method, Austenal's automatic instant selector guide were proposed and was followed with some effectiveness. However, these thoughts were not definitive and ideal in the selection of teeth.^[1]

Various studies established the data with landmarks, formula, and anthropometric data. The size of the anterior teeth was established through various facial measurements-bizygomatic, interpupillary, inter-alar distance, inter-canine distance, intercanthal distances, inter commissural.^[2-4] Studies found few measurements superior over other. The literature established that these methods can aid in determining appropriate dimensions than to be used as definitive measurements. The search still exists to determine the definitive method that can aid in determining the teeth size.

Extensive studies were done to relate the teeth to the geometric proportions. Golden proportions, Golden mean, Recurrent esthetic dental proportion, Preston proportion were some of the common proportions estimated and studied.^[5] These proportions were related to partial edentulous and dentulous situations, aided more to establish esthetics and was an adjuvant to determine the size or aided in the selection of anterior teeth. In addition,

the proportions were established and related to various anatomical components of the body like fingers, nails, and correlated to determine the tooth dimensions. Many determined the correlation ratio but clinically these data are less significant to determine the tooth dimensions.

The anterior teeth selection was correlated to psychological theories. The concepts are realistic additionally it adapts the dentogenic concept in terms of age, gender, personality, color, and characterization of teeth. These theories, though enhance, customizes the tooth esthetics for the patient but does not provide definite data to establish the size of the teeth.

The digital programs comprehend most of these theories, provide options for tooth selection and esthetic enhancements. The theories, practices, and skills can be easily applied and evaluated in clinical situations. The principles followed are more than one of the historical thoughts but the technology aids in easy establishing of the data than analog forms. Furthermore, the digital format provides visualization and try-in options that facilitate better selection and application.

All theories and computation techniques aid in determining the size of the teeth that vary approximately from 0.1 to 1 cm to original dimensions. These computation errors become clinically insignificant since the teeth are viewed from a distance and space provided by the edentulous arch accommodates these errors. The techniques proposed, evaluated, and followed has its own limitations and they are not precise in establishing the tooth dimensions. Moreover, the availability or difficulty in customizing the teeth to precise dimension mandates to adopt/accept the techniques with limitations.

The conceptual theories of proportion or dental esthetics or correlating to tooth dimensions have become the trend. The studies on determining correlation hypothesis are widely done. Every part of the body is related to determine the size of the teeth. Extensive studies are done even during

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this phase to establish the correlation ratios to aid in tooth selection and improving esthetics. These studies are done in terms of age, gender, race, ethnicity, and population. The inferences obtain aid in the advancement of science.^[6-9] However, many studies are in primeval in nature. Still, many data are historical, repetitive, and with no applications. It is essential, more comprehensive studies are done to establish the relationship or determine the tooth dimensions. Inferences made with small sample sizes, ethnicity is insignificant and less impactful. The earlier studies aided to determine the appropriate form and dimensions. Future studies require robust study designs, larger sample sizes with higher validity and precision to determine the exactness of tooth dimensions. The correlation studies for tooth dimension shall be widely appreciated if it is novel and that can aid in establishing the accurate relationship for instant clinical applications.

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Conflicts of interest

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