ASSOCIATION OF SKELETAL MALOCCLUSION WITH LIFE QUALITY & ORAL HEALTH IMPACT BEFORE ORTHODONTIC INTERVENTIONS: A CROSS-SECTIONAL RESEARCH

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Abstract:

Objective: We aimed at the determination of oral health impact occurrences in the severe skeletal malocclusions patients and deformities of dentofacial skeletal nature before any orthodontic interventions.

Methods: Our research was cross-sectional by design which was carried out on forty-four patients who were referred to surgical or orthodontic treatment at Allied Hospital, Faisalabad (October, 2016 to April, 2017). Male to female strength was respectively 15 and 29 with mean age factor of (21.5±5.4 years). A fourteen items questionnaire was used as data collection tool about life quality measurement.

All the cases who approached for orthodontic treatment were made a part of the research with all the cases of requiring orthodontic therapy. All the cases showing chronic medical conditions, craniofacial anomalies (palate and cleft lip), previous orthodontic treatment, poor periodontal health status and untreated dental caries were not included in this research. OHIP – 14 was used for the calculation of extent, frequency and severity. We applied inferential and descriptive method in this research.

Results: Oral impact frequency in cases of malocclusion was observed as (27.3%) with a test value as 56 (P > 0.00). Male and female mean malocclusion value was respectively (22.06 + 7.1) & (21.34 + 4.4) with a significant P-value (> 0.626). Significant difference can be observed in these values. Class I, II and III were observed with respective mean values as 24.5; 28.9 & 30.5 (P > 0.44) without any significant variation.

Conclusion: No variation was observed in skeleton malocclusion class in terms of life-quality and no variation in gender about oral health patients impact.

Keywords: *Orthodontics, Dentofacial deformities, Oral Health, Malocclusion, Oral Health Quality of Life (OHQoL) and Corrective Orthodontics.*

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INTRODUCTION:

Human perception about objectives is considered as life quality (WHO). Oral health impacts are reported in the severe dentofacial deformities and malocclusions patients about overall well-being.

Profession and personal relations are strongly affected by facial aesthetics in every stage of life. Dissatisfaction can be observed in the severe malocclusions patients. Specifically, dentofacial deformities cases change face for the functional stability through ortho-surgical interventions as most appropriate as there is a strong association of facial outlook on life quality.

Malocclusion is one complex aspect about oral health; whereas, more substantive data can be gathered through clinical evaluation about the related oral disorders and impact on the life quality.

Life quality is multi-dimensional aspect which covers social, physical and psychological perceptions subjected to overall well-being as dentofacial deformities patients face all these issues. Orthodontic treatment is aimed at the improved harmonious relationship of lower and upper jaws for the improvement of the occlusal function. However, psychological treatment is also recommended. Dentofacial and Malocclusion deformities can be influential on social, physical and psychological functioning as they are more prevalent. Dental research has increased to add in the traditional orthodontist's management of the patients and better comprehension of the malocclusion and life quality is in focus.

Numerous (OHQoL) measures are introduced for the assessment of status of oral health. This reports five outcomes of a possible oral disease including impairment, pain/discomfort, functional limitation, handicap and disability. Moreover, it is proposed that there is a relation of these domains with structural abnormality (caries) which may cause functional limitation (difficulty in chewing) and discomfort/pain causing disability (restricted routine activity performance) and this can cause handicap (social isolation). Various indices have been developed about Orthodontists for malocclusion severity assessment, treatment need, perceived treatment complexity and outcomes quality based on the associated occlusal features.

Assessment need of Orthodontists is at increase which is required in routine lives of the patients. Systematic assessment is mandatory for the treatment including current condition, dental and medical history with treatment preference. There is a strong demand of the surgical procedure by the patients as it damages the social and psychological interactions. The comprehensive concept about (OHRQoL) is perception of the patient about oral-facial impact and dental health condition which affects social, physical and psychological health [7].

In the field of dentistry, it is recognized about the disease measures objectives for the insight in the routine living and oral disorders; this task has been undertaken by dentistry. There is a wide use of life quality and health assessment for the solution of oral and facial disorders in order to improve life and health quality. Locker reports about the effect of health issues on the life quality [14]. Related implications of these disorders may include chronic disabling, reduced life quality, poor health and disease presence. Attitude of the individual may vary with experience and time which can be modified with expecting, adaption and imitation (eating, chewing issues and oral cancer).

We aimed at the determination of oral health impact occurrences in the severe skeletal malocclusions patients and deformities of dentofacial skeletal nature before any orthodontic interventions.

PATIENTS AND METHODS:

Our research was cross-sectional by design which was carried out on forty-four patients who were referred to surgical or orthodontic treatment at Allied Hospital, Faisalabad (October, 2016 to April, 2017). Male to female strength was respectively 15 and 29 with mean age factor of (21.5±5.4 years). A fourteen items questionnaire was used as data collection tool about life quality measurement.

All the cases who approached for orthodontic treatment were made a part of the research with all the cases of requiring orthodontic therapy. All the cases showing chronic medical conditions, craniofacial anomalies (palate and cleft lip), previous orthodontic treatment, poor periodontal health status and untreated dental caries were not included in this research. OHIP – 14 was used for the calculation of extent, frequency and severity. We applied inferential and descriptive method in this research. Various tools are available for the measurement of dental outcomes and their impact on oral health and life quality [15 – 17]. Wide use has been observed about the "Oral Health Impact Profile" (OHIP – 14) with seven domains with two items in every domain dealing with functional limitation, psychological discomfort, physical pain, psychological disability, physical disability handicap and social disability. Response

was taken on Linkert Scale graduated from Zero to Four respectively never, hardly ever, occasionally, fairly often and very often.

Proper guidance was extended to patients in order to fill the research questionnaire. Severe skeletal malocclusion impact on life quality was verified by one-way "ANOVA" test.
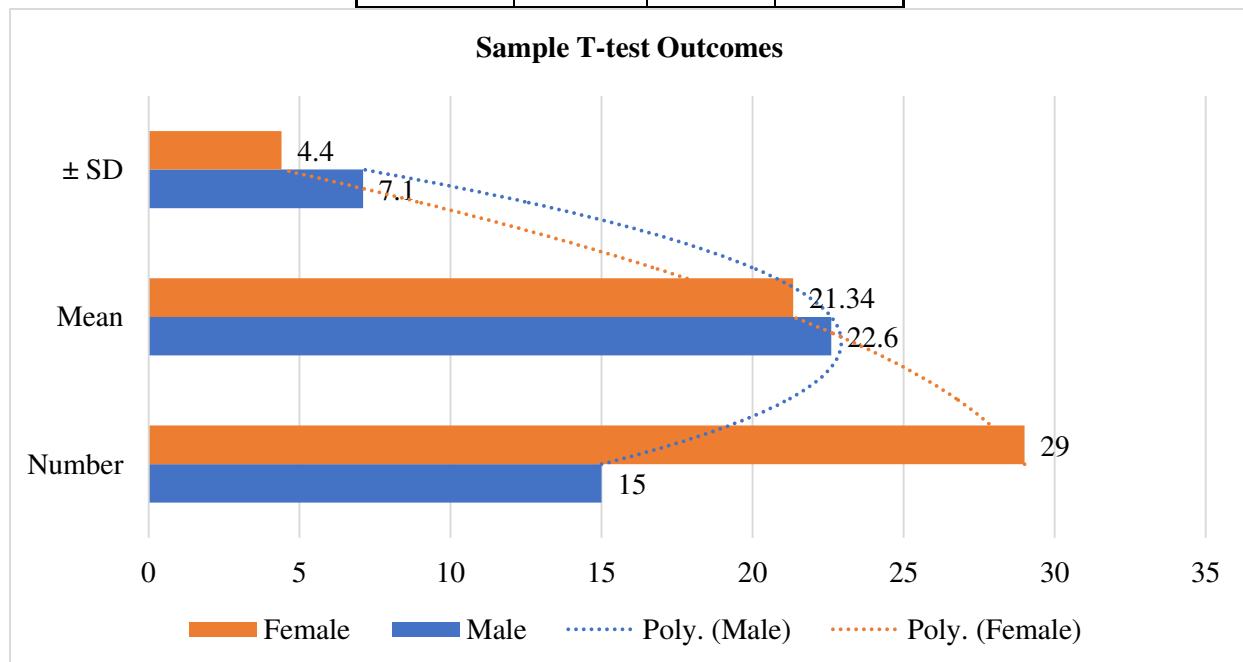
RESULT:
Oral impact frequency in cases of malocclusion was observed as (27.3%) with a test value as 56 (P >

0.00). Male and female mean malocclusion value was respectively (22.06 + 7.1) & (21.34 + 4.4) with a significant P-value (> 0.626). Significant difference can be observed in these values. Class I, II and III were observed with respective mean values as 24.5; 28.9 & 30.5 (P > 0.44) without any significant variation. Inferential and descriptive method was used to check the malocclusion patient's oral health impact (ANOVA); whereas, gender difference was checked by Sample T-test. We proved the hypothesis that life quality is affected by oral health.

Table. Independent sample t-test (Gender difference and Oral health impact)

Gender	Number	Mean	± SD
Male	15	22.6	7.1
Female	29	21.34	4.4

Sample T-test Outcomes

DISCUSSION:
For the assessment of validity, response and reliability of life quality and oral health, no criteria are existent. Our criteria were selected on the base of literature review and widely used criteria was selected. In the sample population satisfactory content validity and face was showed by "OHIP – 14". Administration of the research questionnaire was very comfortable in short time span. Higher participation was because of less number of items in the research questionnaire. Other evidence is the very low item ability of the non-responsiveness when used with self-administered research questionnaire (OHIP – 14) [19 – 21].

Severe malocclusions patients or dentofacial deformities cases reported numerous oral health impacts which affected the well-being in a number of ways. Orthodontics combined with Orthognathic surgery is traditional modality for the treatment of such cases. Remarkable improvement is expected by the patients opting for orthognathic surgical procedure about life quality and physical well-being. These patients face issues of chewing, periodontal disease and speaking which are commonly reported. Significant factor of motivation is an improvement in the aesthetics after the orthognathic and orthodontic treatment; whereas, few of the patients also report their concern about low self-esteem, body image or self-concept. We also observed that in every group it

is not necessary that skeletal malocclusions are subjected to oral impacts in every case of malocclusion. An overall life quality and oral health impact was noticed among various groups.

An individual's perception was measure by the "OHIP – 14" questionnaire developed by Slade, which is also most commonly used questionnaire for the assessment of an individual perception about oral condition [12]. Wide use has been observed about the "Oral Health Impact Profile" (OHIP – 14) with seven domains with two items in every domain dealing with functional limitation, psychological discomfort, physical pain, psychological disability, physical disability handicap and social disability. Response was taken on Linkert Scale graduated as Zero, One, Two, Three and Four respectively never, hardly ever, occasionally, fairly often and very often.

Oral health impact was observed in the previous research studies; NHS, 2000 (National Health Survey) reported the oral health impact in the population of thirty year and above age group [1]. Seven times greater oral health impact was reported in a research conducted on 151 patients of skeleton malocclusion which was also compared with the previous study [2].

Twice higher difficulty level was observed in eating in the patients of malocclusion than those without. These patients also suffered four times higher psychological disability about their oral condition [1]. Life quality impact was not observed in this research in most of the cases. In other research works Class-II cases were observed as less self-conscious about their mouth, teeth and diet than Class-III and numerous other kinds of skeleton malocclusion cases [2]. We observed less patients number in Class-III & I than Class-II cases. Life quality presented no variation in the gender in the patients of skeleton malocclusion. Minor variation has been reported in the Survey of 2000 as males were relatively higher than the females with respective (4.2 Vs13.5) than females (3.9 Vs 19.6) [1]. For the aesthetic improvement as it is motivating patients seek for the orthodontic treatment as it improves life quality and overall social standing with well-being [3].

CONCLUSION:
No variation was observed in skeleton malocclusion class in terms of life-quality and no variation in gender about oral health patients impact.

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