



Journal Homepage: -www.journalijar.com
**INTERNATIONAL JOURNAL OF
 ADVANCED RESEARCH (IJAR)**

Article DOI:10.21474/IJAR01/ 9539
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/9539>



RESEARCH ARTICLE

ASSOCIATION BETWEEN ORTHODONTIC TREATMENT NEEDS AND ORAL HEALTH RELATED QUALITY OF LIFE AMONG YOUNG ADULTS AGED 17-20 YEARS IN KHAMMAM, TELANGANA STATE.

Dr. Nikhil Moutam, Dr. K.V.N.R. Pratap, Dr. T. Madhavi Padma, Dr. V. Siva Kalyan And Dr.P.Srikanth.

1. Post graduate, Department of Public health dentistry, Mamata Dental College, Khammam.
2. Professor and Head Department of Public health dentistry, Mamata Dental College, Khammam.
3. Professor Department of Public health dentistry, Mamata Dental College, Khammam.
4. Reader Department of Public health dentistry, Mamata Dental College, Khammam.
5. Senior Lecturer Department of Public health dentistry, Mamata Dental College, Khammam.

Manuscript Info

Manuscript History

Received: 08 June 2019
 Final Accepted: 10 July 2019
 Published: August 2019

Key words:-

malocclusion, adolescent, OHRQoL, IOTN.

Abstract

Background: To assess the association between Orthodontic treatment needs and Oral health related quality of life among young adults.

Materials and methods: A cross sectional study was conducted on orthodontic patients visiting Mamata dental college, Khammam, Telangana state. The study instrument consists of three parts. First part consists of demographic details. Second part consists of Oral health related quality of life by OHIP-14 questionnaire. Third part consists of Dental health component (DHC) of Index of orthodontic treatment needs (IOTN).

Results: the distribution of study population based on age. Majority 32.55% of the participants were 19-20 years old. Distribution of study participants to gender, where majority 72.40% of them are females.

Conclusion: Reported impacts are present among both genders however females were affected more as compared to males. elder age groups report higher impact than younger age groups.

Copy Right, IJAR, 2019,. All rights reserved.

Introduction:-

Millions of individuals worldwide are suffering from orodental problems in spite of most of them being preventable. Malocclusion is one of them. Malocclusion is not a disease, but a morphological variation which may or may not be associated with pathological conditions. Malocclusion is one of the most prevalent oral problems next to dental caries and periodontal disease and usually ranked third among worldwide public health dental priorities¹.

Facial appearance has a long lasting implication on an individual. An unacceptable dental appearance has often been associated with a negative effect on self-image, career advancement and peer-group acceptance². According to the concept of oral health-related quality of life (OHRQOL), good oral health is no longer seen as the mere absence of oral diseases and dysfunction. OHRQOL encompasses the absence of negative impacts of oral conditions on social life and a positive sense of dentofacial self-confidence³.

Corresponding Author:-Dr. Nikhil Moutam.

Address:-Post graduate, Department of Public health dentistry, Mamata Dental College, Khammam.

Understanding the physical, social, and psychological impact of malocclusion on OHRQOL needs more attention, since it sheds light on the effects of malocclusion on people's lives and provides more understanding of the demand for orthodontic treatment beyond clinician parameters. In addition, since social and psychological effects are the key motives for seeking orthodontic treatment, OHRQOL can be considered the best measurement for orthodontic treatment need and outcome. Therefore, OHRQOL measurement is recommended for orthodontists to supplement clinical findings, since OHRQOL outcome does not necessarily correlate with such objective findings.

The oral health impact profile (OHIP) is an extensively used instrument for the assessment of OHRQOL. The original version of the scale includes 49 items divided into 7 domains. A short form of the OHIP containing only 14 items (OHIP-14) has been developed. The OHIP is designed to determine the perception of the social impact of oral disorders and has well-documented psychometric properties³.

There is no literature available on addressing the impact of malocclusion on Oral health quality of life. So it is necessary to determine the association between Orthodontic treatment needs and Oral health related quality of life among young adults.

Materials and methods:-

Study design:

A cross sectional study

Study population:

The present study was conducted on orthodontic patients visiting, Khammam, Telangana state.

Study area:

Khammam, Telangana state.

Study instrument:

The study instrument consists of three parts. The first part consists of Demographic details like name, age, gender, qualification etc. Second part consists of Oral health related quality of life by OHIP-14 questionnaire. Third part consists of Dental health component (DHC) of Index of orthodontic treatment needs (IOTN).

Oral Health Related Quality of Life (OHIP-14) consists of 14 questions, which measures the quality of life in seven fields of functional limitations, physical problems, mental and emotional problems, physical handicap, mental and emotional handicap, social handicap and complete handicap. In this questionnaire, question 1 of each two questions evaluates one of those fields. Each of these questions are in relation to experiencing a problem arising from the teeth and the oral conditions. The subject's answers are scored in the 5 point's Lickert's scale as "zero" for "never", "1" for "hardly ever", "2" for "occasionally", "3" for "fairly often" and "4" for "very often". On the whole, a score ranging between "0" and "56" is calculated for each subject. Higher scores indicate a lower oral health related quality of life for the subjects⁵.

Index of Orthodontic Treatment Need (IOTN) was described by P.H.Brook and W.C.shaw in 1989. To assess orthodontic treatment need from an anatomical and aesthetic perspective⁵.

Dental Health Component (DHC):The DHC is categorized in five different grades ranging from grade 1, representing "no need" for treatment, and grade 5, representing "very great need" for orthodontic treatment, based on the evaluation of five occlusal traits.Missing teeth, Overjet, Crossbite, Contact point displacement, Overbite

Pilot study: A pilot study was undertaken among 30 patients attending Department of orthodontics and dento- facial orthopedics, Mamata dental college Khammam for estimation of sample size and to check the relevancy of proforma.

Sample size determination:

Pilot study was conducted among 30 samples. Sample size was derived from the following. Taken into account 95% confidence interval and 80% power of the study, the sample size derived was 213.

Sampling methodology:

The present study was conducted in the department of orthodontics and dento-facial orthopedics, Mamata dental college. A purposive sampling technique was adopted to select the participants, those who are about to undergo Orthodontic treatment in the Department are taken into the study till the required sample size is reached.

Inclusion criteria:

1. Individuals who are about to undergo orthodontic treatment. and have a perceived need for orthodontic treatment.
2. Patients, who could understand, read and write in English language.
3. Patients who were in the age group of 15-25 years.

Exclusion criteria:

1. Individuals who have undergone previous orthodontic treatment.
2. Individuals with chronic medical conditions.
3. Individuals with craniofacial anomalies (cleft lip and palate).
4. Individuals with presence of dental caries or poor periodontal health status which can have an impact on OHRQoL.

Schedule of the study:

This study was systematically scheduled to spread over a period of 6 months from January 2018 to march 2018. On an average, 10 subjects were examined each day. Even though a detailed schedule plan was prepared well in advance, few adjustments and changes had to be made while working it practically.

Permission and consent:**Ethical clearance:**

1. Ethical clearance was obtained from Ethical Committee of Mamata Dental College, Khammam.
2. Permission obtained from the Department of orthodontics and Dento facial orthopedics, Mamata Dental College.
3. Informed consent: Written consent was taken from each subject before recording the questionnaire and oral examination.

Calibration and training:

Prior to the start of the study the examiner was calibrated in the Department of Public Health Dentistry, Mamata Dental College, Khammam, to reduce intra examiner variability. The examination was done on a group of 10 subjects and further on 25 subjects twice with an interval of 30 minutes between examinations.

Method of obtaining data:

A specially prepared and pre tested proforma designed for collecting all the required and relevant general information and clinical findings was used for recording the data.

1. Recording of Demographic profile: This section consists of Age, Gender, Qualification.
2. Assessment of Orthodontic treatment need: Each patient was examined for Orthodontic treatment need with the DHC of IOTN. DHC grades orthodontic treatment need into (1) Little or no treatment need, (2) borderline need, and (3) treatment required. The DHC uses a simple ruler and an acronym-MOCDO (missing teeth, overjet, crossbite, displacement of contact points, overbite)- to identify the most severe occlusal trait for each patient. The final overall score was given to the patient according to the most severe trait.
3. Assessment of Oral Health related Quality of Life: The data collection instrument for assessment of QHRQOL was the OHIP-14 questionnaire. Each patient was asked about the frequency that he or she experienced an impact on 14 daily activities. The OHIP-14 is divided into seven domains. Responses were made on a 5-point Likert-type scale (never, hardly ever, occasionally, fairly often, and very often). A threshold of occasionally, fairly often, and very often was used to dichotomize responses, thereby indicating participants who had experienced at least some oral health impact.

Infection control:

For investigation, disposable masks and gloves are used to prevent cross infection. Sterilized instruments were used for examination of each patient.

Statistical analysis:

Data was transformed in to Microsoft excel sheet 2013 and analyzed using IBM SPSS Software version 20.0.(SPSS Pty Ltd, Chicao, IL USA) was used for statistical analysis. Data was analyzed by descriptive statistics (frequency distribution and cross tabulation).

Frequency distributions were analyzed for each variable.

Chi-square test was employed to test significance among variables.

The effect of different Orthodontic treatment needs on Oral health related quality of life among young adults aged 17-20years done by Kruskal Wallis ANOVA and t test.

Results:-

Distribution of study participants based on Age, Gender and level of education:

The total study population consists of 213, Table-1 depicts the distribution of study population based on age .Majority 32.55% of the participants were 19-20 years old. The distribution of study participants to gender, where majority 72.40% of them are females. The level of education of study participant's majority 91.15% of them were Undergraduate.

Gender wise distribution of participants by age and levels of education:

Table-2 and Graph -2 depicts the gender wise distribution of participants by age where 36.79% 19-20years. Table-2 and Graph-5 depicts the gender wise distribution, where 78.30% of the males and 96.04% of females were undergraduates.

Distribution of study participants according to IOTN- DHC grade:

Table -3 and Graph- 3 depicts the distribution of respondents by IOTN DHC grade where 42.97% Treatment required,37.50% Borderline treatment,19.53% little or no treatment required.

Discussion:-

The health related quality of life is increasingly placing more emphasis on patient based evaluation, malocclusion has accepted physical and psychological consequences. This is due to the different interpretation of what the impact constitutes and the lack of standardized approaches for assessment. Therefore, this study was conducted to know the association between orthodontic treatment needs and oral health related quality of life.

This cross sectional study was conducted on 213 young adults aged 17-20 years old from Khammam town, Telangana state.

In the present study, 32.55% of the study participants were in the age group 19-20 years. Whereas, in the study conducted by Hasan A⁴ had in the age group of 23 years.

In this study, 72.40% were females and 27.60% were males. It is similar to the study conducted by Fatima et al⁸ where 78% were females and 22% were males.

42.97% study participants required Orthodontic treatment, 37.50% study participants were in borderline group, 19.53% were in little or no treatment group In the present study. It is Similar to the study conducted by Fatima et al⁸ where 40% were in borderline treatment group, 30% of them require treatment. Where as in the study conducted by Hasan A⁴ showed 56% were in borderline treatment group, 29.2% of them required treatment, and 14.8% did not require treatment.

In the present study comparison done between oral health impact profile to gender and orthodontic treatment needs, which is similar to the study conducted by Saxena et al² and Hasan A⁴.

Conclusion:-

The present study was conducted to assess the physical, social and psychological impact of malocclusion on OHRQoL since it provides more understanding of the demand for orthodontic treatment beyond clinician limits. The study showed that malocclusion has negative impact on OHQRoL and is highest for the Psychological discomfort followed by Psychological disability domains physical pain, discomfort, social disability domains Reported impacts

are present among both genders however females were affected more as compared to males. elder age groups report higher impact than younger age groups.

Table No 1:-Distribution of participants by Age, Gender and level of Education

Characteristics	No of participants	% of participants
Gender		
Male	59	27.60
Female	154	72.40
Age groups		
17 -18 yrs	88	22.92
19 -20 yrs	125	32.55
Mean age	20.28	
SD age	2.02	
Levels of Education		
Intermediate/ diploma	19	7.03
Degree	194	91.15
Total	213	100.00

Gender: 72.40% were females. Age group:30.99% is 21-22 years. Level of Education : degree 91.15%

Table No 2:-Distribution of male and female participants by age and levels of education

Characteristics	Male	%	Female	%	Total	%
Age groups						
17 -18 yrs	17	19.81	21	24.10	88	22.92
19 -20 yrs	39	36.79	86	30.94	125	32.55
Mean age	20.48		20.20		20.28	
SD age	2.31		1.89		2.02	
Level of education						
Intermediate/ diploma	23	21.69	11	3.96	34	8.85
undergraduate	83	78.30	267	96.04	350	91.15
Post graduate	4	3.77	3	1.08	7	1.82
Total	106	100.00	278	100.00	384	100.00

Age groups: 36.79% males (19-20 years) 33.81% females(21-22 years). Level of education in males -78.30%, females 96.04% (degree)

Table No 3:-Distribution of respondents by IOTN DHC grade

IOTN DHC grade	No of participants	% of participants
Little or No treatment need	41	19.53
Borderline treatment	80	37.50
Treatment required	92	42.97
Total	213	100.00

42.97% required Treatment.

References:-

1. Vrinda Saxena, Nisha kankane, Shanthi Vanku, Ajay Bhambal, Bharat Kankane, JuhiLhiya. Orthodontic Treatment needs and its impact on oral health related quality of life among the adolescents visiting People's college of dental sciences -and research center, Bhopal (M.P). Journal of Dental, Oral and Craniofacial Epidemiology. 2013; 1(2): 15-24.
2. O'Brien, C., Benson, P. E., & Marshman, Z. Evaluation of a quality of life measure for children with malocclusion. Journal of Orthodontics 2007; 34(3): 185–193.
3. Masood Y, Masood M, Zainul NN, Araby NB, Hussain SF, Newton T. Impact of malocclusion on oral health related quality of life in young people. Health and quality of life outcomes. 2013; 11(1): 25.
4. Hassan AH, Amin HE. Association of orthodontic treatment needs and oral health-related quality of life in young adults. American Journal of Orthodontics and Dentofacial Orthopedics. 2010; 137(1): 42-7.

5. Slade, G. D. Assessing change in quality of life using the Oral Health Impact Profile. *Community Dentistry and Oral Epidemiology*. 1998; 26(1): 52–61.
6. C.M.de Oliveria and A. Sheiham. Orthodontic treatment and its impact on oral health related quality of life in Brazilian adolescents. *Journal of Orthodontics*, 2004; 31(3): 20-27.
7. Klages, U. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *The European Journal of Orthodontics* 2004; 26(5): 507–514.
8. Fatima A., Elmahgoub, Amal H abuaffn. Impact of malocclusion on quality of life in Sudanese dental students. *Orthodontic journal of Nepal*, 2015; 5(1): 12-17.