

Orthodontic Treatment Needs Among Population Visiting the Liaquat University of Medical & Health Sciences Hospital

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ABSTRACT

Objective: This study was to determine the orthodontic treatment need in local population visiting the Liaquat University of Medical & Health Sciences Hospital by using index of orthodontic treatment need.

Study Design: Descriptive cross sectional study

Place and Duration of Study: This study was conducted on patients visiting to Dental outpatient department (OPD) of Liaquat University of Medical & Health Sciences Hospital, Jamshoro from September 2012 to October 2013.

Materials and Methods: Informed written consent was taken from 150 patients' satisfying the inclusion criteria, history and clinical examination was done on patients by using index of orthodontic treatment need. SPSS version 19 was used to analyze the data and frequency was determined for categorical variables. Mean and standard deviation was computed for numerical variables.

Results: According to Dental Health Component (DHC) treatment need 36.7%, 34.7%, 24.7% and 4.0% found to have orthodontic treatment need from no little treatment to very great treatment respectively and according to Aesthetic Component (AC) treatment need 49.3%, 44.0% and 6.7% found to have orthodontic treatment need from no little treatment to great treatment need.

Conclusion: It was concluded that the patients of this locality found to have increased need for orthodontic treatment.

Key Words: Aesthetic Component, Dental Health Component, Index of Orthodontic Treatment Needs

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INTRODUCTION

Orthodontic treatment is complicated, costly and long duration dental treatments. Only trained doctors are required to complete this. Research has proved that need of the orthodontics treatment does not necessarily correlate with actual need of the patient.^{1,2} Orthodontic treatment concern varies from patient to patient. Few patients with minor occlusal changes might express orthodontic concern; while others with great need may not concern about treatment.^{3,4} It has been suggested by researchers that social status and feasibility of the services effects orthodontic treatment needs.^{5,6}

Majority of patients demand orthodontic treatment for better facial appearance. Individual perception regarding orthodontic treatment need is influenced by multiple factors such as social, cultural and psychological factors.³ Number of Orthodontic patients have been increasing now a days and their

main concern is esthetic. For government funded programs and health insurance companies, it is difficult to manage for all patients due to lack of sources so it is necessary to assess the need for orthodontic treatment.⁴

Patients with occlusal variation might feel shy about their facial look, which may affect their psychology, smile or career opportunities.³ Occlusal variability's are associated with psychosocial distress, poor periodontal conditions with impaired masticatory function.⁶⁻⁹ For expanding Orthodontic treatment among public health system it needs exact information on orthodontic treatment needs.¹⁰ Multiple indices have been used to evaluate orthodontic treatment need.⁹⁻¹¹

Many surveys on assessment of orthodontic treatment need are performed on the index of orthodontics treatment need (IOTN) in different countries^{8, 9, 12}. IOTN is useful index for research in different communities and epidemiology of occlusal variation.¹¹

In Pakistan a study showed that total 75% of patients need orthodontic treatment (grade 4, 55% and grade 5 20%) while 36% patients was in acute need of

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treatment according to aesthetic component.¹³ As the number of orthodontic patients is increasing day by day and the latest data for the treatment need of orthodontic is not available in this region of Pakistan, so the purpose of this study was to determine the need of orthodontic treatment in patients visiting the Liaquat University Hospital.

MATERIALS AND METHODS

The study was conducted on 150 subjects to evaluate orthodontic treatment need by using IOTN among patients visiting outpatient department of Liaquat Medical University Hospital Jamshoro / Hyderabad from September 2012 to October 2013. The subjects were selected using non probability convenient sampling technique. The inclusion criteria were patients irrespective of gender, having complete permanent dentition up to first permanent molar, age between 15-25 years. Exclusion Criteria were patients with previous Orthodontic treatment, patients with any tooth extracted before the study, patient having any facial asymmetry and patients with mix dentition. Approval from university ethical committee was taken and informed written consent was obtained from the patients. History and clinical examination was done on patients' fulfilling the inclusion criteria. IOTN consists of dental health component (DHC) having five grades from no need for treatment to very great treatment and aesthetic component (AC) scale of 10 color photographs showing different levels of attractiveness of the dentition.

Statistical package for social sciences (SPSS) 19 was used to analyze data. Frequencies were determined for gender, DHC Orthodontic Treatment Need and AC Orthodontic Treatment Need. For the quantitative variables like age, mean for central tendency and standard deviation were computed.

RESULTS

The study group consisted of 150 subjects with age range of 15 to 25 years. Out of 150 subjects 44% were males and 56% were females. The mean age and standard deviation of the studied population was 19.79 ± 2.77 years. Age was divided in three groups and frequency was computed (Table-1)

The frequency and percentage of each grade of Dental Health Component (DHC) and Aesthetic Component (AC) was analyzed with respect to the overall sample size. The distribution of DHC and AC for IOTN is depicted in (Figure-1 and 2).

Table No.1: Age Group-wise Frequency Distribution

Age Group (Years)	Frequency	Percent
15-18	48	32.0
19-21	58	38.7
22-25	44	29.3
Total	150	100.0

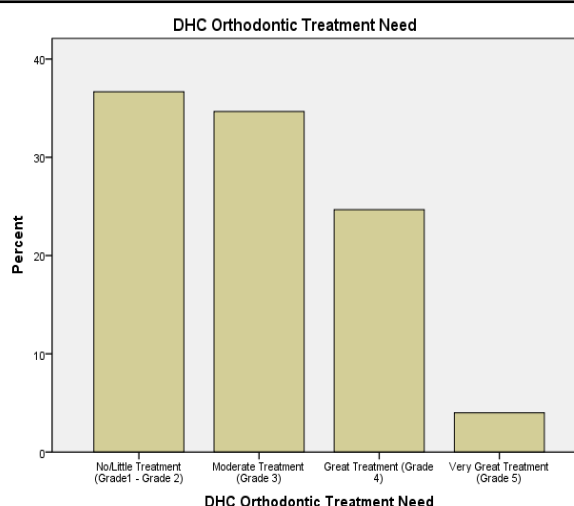


Figure No.1: Percentage-wise DHC Treatment Need

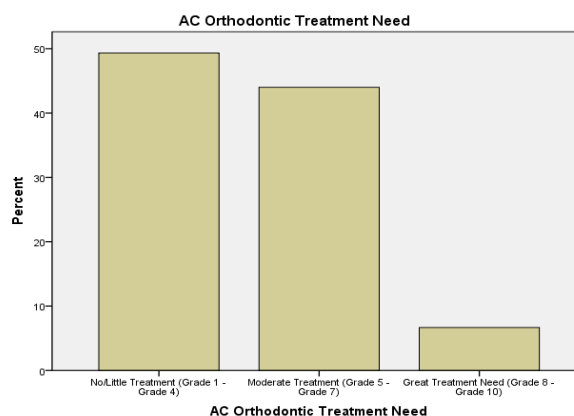


Figure No.2: Percentage-wise AC Treatment Need

DISCUSSION

The results of this study are comparable with the study of Mugonzibura E.A.¹⁴, in which AC grade 8-10 & DHC grade 4-5 occurred in 5-15% and 16-36% respectively in children.

The results of Albarkat F.¹⁵ and S.M Danaei¹⁶ are not in agreement with this study. He showed a higher proportion of female as compared to male having normal or minor malocclusion. Similarly in the study of Zahid S and Bashir U.⁴ estimated frequency in definite treatment need category (Grade 4 & Grade 5) of DHC is 75%, 6.7% and 17.7% recorded for no or little treatment need and moderate treatment need category. Our category of DHC, most of the females are falling in Grade 1, Grade 3 & Grade 4. Whereas Grade 2 both male & female have balance frequency but in Grade 5 males are more involved as compared to females.

The findings of this study showed that 58% patients had orthodontic treatment need from moderate to great treatment need, these results are comparable with the study conducted by Bashir U&Hameed WU¹⁷, in which 60% of population was found to be in definite treatment need.

The study of Siddique TA¹⁸ yielded the results with 40% out of 125 subjects were in objective need of orthodontic treatment as recorded on casts. Difference in results might be due to difference in selection of population, study design and other characteristics such as oral hygiene, periodontium health, lip incompetence, impaired speech, masticatory problems and TMJ joint disorder. The results of this study regarding IOTN are not comparable with study results of Hedayati's¹⁹ in which AC 91-93% were in no need or little need, 3.91% in moderate need and 4.11% in great need treatment group, while in this study 49% fall in no need or little need AC treatment, 44% and 6.66 % in moderate to great need treatment respectively. According to DHC boys showed more need for treatment than girls and Grade 8 showed the highest percentage in great treatment need. While in this study girls are in majority need treatment as compared to boys. This study had some limitations like limited sample size and inconsistent data accumulation. It was a single operator based study so operator bias could not be eliminated, however, it has been tried to provide some information about the treatment need of orthodontic.

CONCLUSION

In this study it has been concluded that; the patients of this locality found to have increased need for orthodontic treatment, so we recommend that the government and teaching institute should pay more attention to the training of orthodontic specialists, so that orthodontic cases should be properly diagnosed, referred and or treated on affordable cost.

Conflict of Interest: This study has no conflict of interest to declare by any author.

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