Research Report

Dental student's perception to Aesthetic Component of IOTN and demand for orthodontic treatment

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ABSTRACT

Background: *The aims of orthodontic treatment are to achieve the best interdigitation in centric occlusion in relation with good facial aesthetic and to get a pleasant dento-facial looked with good function as well. Nowadays, people who are seeking orthodontic treatment to fulfill those need come to orthodontist, mostly for aesthetic reason, for good teeth arrangement that will be more aesthetically favorable. However, not all people with malocclusion seek the orthodontic treatment due to the fact, they do not realize that they have orthodontic problem. On the other hand, some other feel they need orthodontic treatment but they can not afford it.* **Purpose:** *To determine the knowledge of malocclusion and demand for orthodontic treatment in related to Aesthetic Component (AC) IOTN.* **Methods:** *The samples were 107 college students of Faculty of Dentistry Airlangga University divided into two as 1st and 7th semester group. Both of the groups were given questionnaire about their knowledge of malocclusion and demand of orthodontic treatment. Then, they were asked to examine themselves using AC IOTN, then researcher and orthodontist examine them.* **Results:** *There was a significant difference on knowledge of malocclusion between both groups, no significant difference on demand of orthodontic treatment between both groups, and no correlation between demand and AC IOTN in both groups. There was a significant difference in AC IOTN score examined by respondent, researcher and orthodontist.* **Conclusion:** *Knowledge of malocclusion was not the only factor that determines demand of orthodontic treatment.*

Key words: *Malocclusion, demand, orthodontic treatment, Aesthetic Component IOTN*

ABSTRAK

Latar belakang: *Tujuan perawatan ortodonti adalah untuk mendapatkan hubungan interdigitasi yang baik berhubungan dengan penampilan estetik wajah untuk mendapatkan fungsi dan penampilan dento-fasial yang baik. Saat ini, banyak orang mencari perawatan ortodonti untuk memenuhi kebutuhan fungsi dan penampilan. Tujuannya adalah susunan gigi yang rata yang lebih dapat diterima secara estetik. Namun, tidak semua orang dengan maloklusi mencari perawatan ortodonti, karena sebagian dari mereka tidak menyadari bahwa mereka memiliki masalah ortodonti, sedangkan sebagian lainnya merasa mereka membutuhkan perawatan ortodonti tetapi tidak bisa membiayainya.* **Tujuan:** *Mengetahui hubungan pengetahuan maloklusi dan demand perawatan ortodonti dengan Aesthetic Component (AC) IOTN.* **Metode:** *Sampel adalah 107 mahasiswa Fakultas Kedokteran Gigi Universitas Airlangga yang dibagi ke dalam 2 kelompok, semester 1 dan semester 7. Kedua kelompok kemudian diberi kuesioner tentang pengetahuan maloklusi dan demand perawatan ortodonti. Kemudian responden diminta untuk menilai diri mereka sendiri menggunakan AC IOTN, setelah itu responden dinilai peneliti dan ortodontis.* **Hasil:** *Terdapat perbedaan pengetahuan maloklusi yang signifikan antara kedua kelompok, tidak ada perbedaan demand perawatan ortodonti yang signifikan pada kedua kelompok, tidak ada hubungan antara demand dan AC IOTN pada kedua kelompok. Ada perbedaan yang signifikan pada skor AC IOTN yang diperiksa oleh responden, peneliti dan ortodontis.* **Simpulan:** *Pengetahuan maloklusi bukan satu-satunya faktor yang mempengaruhi demand perawatan ortodonti.*

Kata kunci: *Maloklusi, demand, perawatan ortodonti, Aesthetic Component IOTN*

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INTRODUCTION

Protrusion and crowded teeth have been a problem for some individuals since long, the efforts to correct the condition has been found since 1000 years BC. In the early of the 21st century, the objective of orthodontic treatment had changed. Nowadays, the need to have the good appearance of dental and facial performance has increased rapidly. This trend shown the awareness of the patient and the parents towards the orthodontic treatment since the dentofacial appearance and the psychosocial problem related to the one's appearance have great effect to a person's quality of life. Not all patients with malocclusion are seeking help for orthodontic treatment. Some patients do not even realized that they have problem and some other patients feel that they need treatment but not be able to afford it. The need and demand for orthodontic treatment varies due to the social condition and culture. In recent days there is a great number of people who need to improve appearance as well as the dental esthetic, especially in young adult group. They are seeking treatment to repair their dental appearance which is considered imperfect. They feel the change of appearance could assist them to get a better self-esteem.[1] As a consequence, the trend which developed nowadays in the society is to have fixed orthodontic treatment.[2]

One of malocclusion index could be used to measure the need of orthodontic treatment is the Index of Orthodontic Treatment Need (IOTN). IOTN is malocclusion index designed based on malocclusion effect that disturb the facial esthetic and dental health. IOTN has two components, the Aesthetic Component and Dental Health Component. Aesthetic Component IOTN consists of scale from 10 pictures of colorful anterior dental looked with different level of severities.[3] IOTN has been widely used recently since its validity, reliabilities and its user friendliness. Aesthetic Component IOTN can be used to measure ones perception towards dental appearance from aesthetical point of view.[4] Patient's opinion on their dental appearance (especially from aesthetical point of view) is very important to consider before deciding the orthodontic treatment for the patient.[5]

The most factors that influences the patient to seek orthodontic treatment is the knowledge and education. The aim of study was to determine the demand of orthodontic treatment and the Aesthetic Component of the IOTN is corelated significantly.

MATERIALS AND METHODS

This study was an analytic observational with the sample of 107 students from the Faculty of Dentistry Universitas Airlangga. The criteria of the subject were firstly and most important, they never had the orthodontic treatment. Respondents consisted of two groups, the first group was students from the first semester (56 students) and the second group was students from the seventh semester (51 students).

The sample were then asked to fill out the questioners to find out about their knowledge on malocclusion and the demand for orthodontic treatment. Then they are being asked as well to judge their own dental appearance based on Aesthetic Component of IOTN using a mirror. For direct assessment aesthetic Component of IOTN consisted of scale from 10 pictures of colorful anterior dental appearance with different level of severities[3] (Figure 1) were used, then alternatively taking turns, the researchers and orthodontist also judged them regarding their dental appearance using Aesthetic Component of IOTN as a guide.

Mann-Whitney analysis was carried on, to test the difference between the knowledge of malocclusion and the demand for orthodontic treatment on each population. Spearman test was conducted to see the correlation between the demand for orthodontic treatment and the score of the Aesthetic Component of IOTN on each population. The Friedman test was also used to see the difference between the score of Aesthetic Component IOTN based on judgment from respondents, researchers and orthodontist.

RESULTS

The knowledge score of the students from the first semester were varied ranging from the highest to the lowest. Students on the seventh semester, on the other hand, showed high knowledge score (Figure 2). Using Mann-Whitney test, it found that there were a significant difference between the knowledge of students from the first and the seventh semester (p=0.001). Most of students from the first semester had a moderate demand for orthodontic treatment. The students from the seventh semester had high demand for orthodontic treatment (Figure 3).
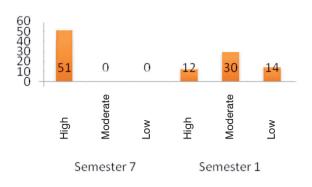

Figure 1. Aesthetic Component IOTN.[6]

Figure 2. Malocclusion knowledge on students from semester 1 and semester 7.
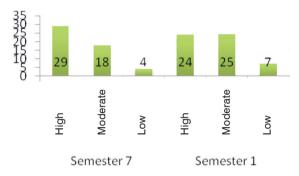

Figure 3. Students Demand or orthodontic treatment in semester 1 and semester 7.

There was no significant difference between the demand between students from semester 1 and students from semester 7, based on Mann-Whitney test to see the difference in demand on both population (p=0.506).

Spearman test was used to know the difference between correlation demand on orthodontic treatment and Aesthetic Component IOTN. The results shown that there was no significant correlation between demand on orthodontic treatment and Aesthetic Component IOTN on both population. P value acquired on students from semester 1 and 7 are respectively 0.243 and 0.916. This showed that there was no significant difference between demand on orthodontic treatment and Aesthetic Component IOTN.

However, a significant score difference on Aesthetic Component IOTN among researchers and orthodontist (p=0.01) due to the fact that there was individual subjectivity in judging their own aesthetical dental aesthetic.

DISCUSSION

Many factors influenced the demand on orthodontic treatment instead of knowledge on malocclusion. Demand or the willingness to seek orthodontic treatment is one example of health behaviors, which most likely based on knowledge.

No difference found between demand in orthodontic treatment between students from semester 1 and 7 could be due to the fact that, nowadays, orthodontic treatment has been widely popular. During the last few years, the demand on orthodontic treatment has increased significantly in accordance with the increase of standard of living in Indonesia. The perception of demand on orthodontic treatment is influenced by many factors.[6] One of it, that widespread of information about orthodontic treatment through media that can be assessed anytime, so the students either from semester 1 and 7 could retrieve information eventhough they have not yet taken any classes on orthodontics. Perception in the society could also become a factor that could influence the demand of treatment. These days orthodontic treatment has been the favorite treatment in the society. This could also influence an individual perception towards the orthodontic treatment.

People with malocclusion, who seek orthodontic treatment was not depends on the patient's characteristic, parents, dentist, orthodontist and the health care system. Study conducted previously on different population in many countries showed that the dentofacial appearance was the strongest motivator to seek orthodontic treatment.[7] The variation on orthodontic treatment on the sample in this study could be due by many factors that influence attitude and influence the demand on orthodontic treatment as well. This is due to the fact that those individuals were not perfect in judging their own dental aesthetic before their visit to orthodontist. Some people with moderate or severe malocclusion feel satisfied with their appearance. On the other hand, others with minor discrepancy or even without discrepancy fell unsatisfied with their dental formation. Perception and confidence towards accepted dental appearance also influenced the demand request of orthodontic treatment. Other than that, there also many factors influenced the demand of orthodontic treatment, that could be explored.

There were many patients who do not really understand on the knowledge, they understand about the information about dental health but maybe would have different perception (in this case, the score of Aesthetic Component of IOTN), which leads to different attitude and perception.[8] This attitude difference leads to the difference in behavior to what they knows and how they perceived of aesthetic in dental health. The scoring of Aesthetic Component of IOTN on each individual to themselves could be different and very subjective, and it does not always influence on the demand of orthodontic treatment.

On the low score of Aesthetic Component of IOTN, individuals in age group 17-24 years old (young adult) tends to seek orthodontic treatment. This showed the high demand on orthodontic treatment does not depend on the severity of the malocclusion viewed from the aesthetical point of view of the person.[9]

There was no guarantee for individual with a good knowledge of dental health would have good attitude and

perception or behavior in dental treatment. Knowledge could influence attitude. However, this could not predict the individual's behavior with high accuracy to asses themselves.[10] Good attitude towards dental health was the tendency to take action. An individual with a positive attitude, however, in this matter was not always be guaranteed to have a positive behavior. Therefore, knowledge on malocclusion was not the only factor that could influence the demand of orthodontic treatment. Demand (high or low) on orthodontic treatment also affected by an individual's environment and the level of education.

The perception on Aesthetic Component of IOTN by a respondent is highly affected by each individual's subjectivity. Therefore, the Aesthetic Component score judging by the student respondent could easily be affected by their own perception. The use of Aesthetic Component to judge the aesthetic from an individual dental aesthetic performance could lead to subjectivity so that the perception of Aesthetic Component by respondent, examiner and orthodontist could also be different. The results from an orthodontist is more objective compared to that of examiner and respondent towards themselves. The judgment on dental performance is subjective and related to the demographic background of the scorer. The judgment of aesthetical dental formation were very complex and varied on each individual. The dental aesthetic performance that could be affected by an individual may not be accepted by others.[5] In addition, an orthodontist's perception in aesthetic component was different from examiner and respondents with less experience. This could also lead to discrepancy in results.

Therefore, the study suggested that the knowledge on malocclusion is not the only factor that influences the demand for orthodontic treatment. Many factors affected the demand for orthodontic treatment, such as, perception, confidence, willingness to seek the treatment, motivation, and attitude.

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