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Original Research Article.

Assessment of Orthodontic Borderline Treatment Need

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ABSTRACT

Background: Orthodontics has grown immensely popular among people of all ages in the 21st century Numerous occlusal indices have been created depending on the severity of the malocclusion and the detrimental consequences it has on oral health in order to classify and prioritize therapy Contrary to other types of treatment, orthodontic care is influenced by both the patient's perspective and the clinician's judgment.

Methods: In this cross - sectional study data was collected by the purposely constructed questionnaire. Questionnaire composed of the demographic items and items related to the orthodontics treatment. The questionnaire was constructed after the series of discussions between the panel of experts. This panel is composed of subject specialists, researchers, and language experts. Cronbach alpha of the questionnaire was calculated. After collection of data, data was coded and entered in the SPSS ver.20 software.

Results: Out of total 190 eligible and selected patients 53% were males, while 47% were females. Cronbach alpha was 0.84. Financial, traditional and social factors are major barriers towards the orthodontic treatment.

Conclusion: The requirement for orthodontic treatment as it relates to dental health doesn't directly affect the quality of life related to oral health, but it does play a part.

Key Words: Orthodontic, Treatment, Border Line.

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INTRODUCTION

Orthodontics has grown immensely popular among people of all ages in the 21st century.[1] Numerous occlusal indices have been created depending on the severity of the malocclusion and the detrimental consequences it has on oral health in order to classify and prioritize therapy.[2] Contrary to other types of treatment, orthodontic care is influenced by both the patient's perspective and the clinician's judgment.[3]

Patients and dentists assess oral health differently, and treatment demand is typically influenced by individual concerns about appearance and other psychosocial issues. It has been discovered that the choice to have treatment depends not only on how severe the malocclusion is, but also on the patient's desire to look better.[4] In order to better understand patients' requirements, satisfaction with treatment, and ultimately the perceived overall quality of healthcare systems, academics and clinicians have recently focused more on patients' perceptions of their oral health status and oral health care systems.[5-7]

According to Zhijian Liua's comprehensive evaluation of 23 papers, there is a weak correlation between malocclusion and the requirement for orthodontic treatment and quality of life.[8]

A distinct notion known as "oral health-related quality of life" has been described as "the lack of negative repercussions of oral problems on social life and a good sense of dentofacial self-confidence".[9] Understanding the physical, social, and psychological effects of malocclusion on dental health-related quality of life is more important since it helps explain why orthodontic therapy is needed beyond what is available to clinicians. Since its results don't really match with such objective data, orthodontists are advised to employ the Oral health-related quality of life to enhance clinical findings.[5]

In industrialized nations, where people are more likely to have their basic needs addressed and orthodontic treatment is partially provided as part of public health services, the majority of studies on the psychosocial implications of malocclusions have been conducted. The connection between malocclusion, esthetic impact, and quality of life is, however, mostly unstudied in undeveloped and developing nations.[10]

The Index of Orthodontic Treatment Needs (IOTN)-DHC defines malocclusions based on specific occlusal characteristics that are thought to be significant for oral health. It tracks the need for orthodontic treatment due to dental health and has five severity levels. According to the scale, those who receive a score of 1 require no therapy, 2, some treatment, 3, borderline treatment, 4, and/or 5 require treatment.[11,12]

The Oral Health Influence Profile (OHIP) is frequently used to assess the impact of dental outcomes on overall quality of life. It was created to be used on a variety of oral problems. Functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social impairment, and handicap are the seven areas into which the OHIP's components are divided.[13] The following questions are the focus of this research: Do different orthodontic treatment requirements for dental health have an effect on the quality of life related to oral health? Does gender have a big impact on how well one feels about their oral health? And in relation to the IOTN-DHC, are there any differences in OHIP scores between genders?

METHODS

In this cross - sectional study data was collected by the purposely constructed questionnaire. Questionnaire composed of the demographic items and items related to the orthodontics treatment. The questionnaire was constructed after the series of discussions between the panel of experts. This panel is composed of subject specialists, researchers, and language experts.

Cronbach alpha of the questionnaire was calculated. After collection of data, data was coded and entered in the SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies and percentages were computed), to measure the significance differences chi-square test was used at 5% level of significance. Data was collected from the patients who visited the dental hospital with orthodontic complaints during the study duration. Informed consent from patient was obtained. The study duration was from January-2022 to April-2022

RESULTS

Out of total 190 eligible and selected patients 53% were males, while 47% were females. Cronbach alpha was 0.84. We have observed significant differences, while comparing Are you satisfied with your dental aesthetics? (p value was less than 0.05) (Table 1) Financial, traditional and social factors are major barriers towards orthodontic treatment. (Fig 1) 56 % and 39.55 respectively considered GBON and AC methods were easier to use. (Fig 2) 42.5% & 53.9%respectively considered GBON and AC methods were appropriate to use. (Fig 3)

Table 1: Gender wise comparisons

	Male		Female		p value
	freq.	%	freq.	%	
Do you think healthy and well-arranged teeth are important for your appearance					
Yes	75	75.00%	85	94.44%	P>0.05
No	25	25.00%	5	5.56%	
Are you satisfied with your dental aesthetics?					
Yes	55	55.00%	75	83.33%	<0.05*
No	45	45.00%	15	16.67%	
Is there anything you would like to change about your teeth?					
Yes	35	35.00%	36	40.00%	P>0.05
No	65	65.00%	54	60.00%	
Do you have any trouble with speaking, chewing, facial muscle pains caused by teeth arrangement?					
Yes	45	45.00%	25	27.78%	P>0.05
No	55	55.00%	65	72.22%	
Do you think you should have orthodontic treatment?					
Yes	25	25.00%	31	34.44%	P>0.05
No	75	75.00%	59	65.56%	
Has anyone ever suggested orthodontic treatment to you?					
Yes	42	42.00%	32	35.56%	P>0.05
No	58	58.00%	58	64.44%	

Figure 1: Preventive factors:

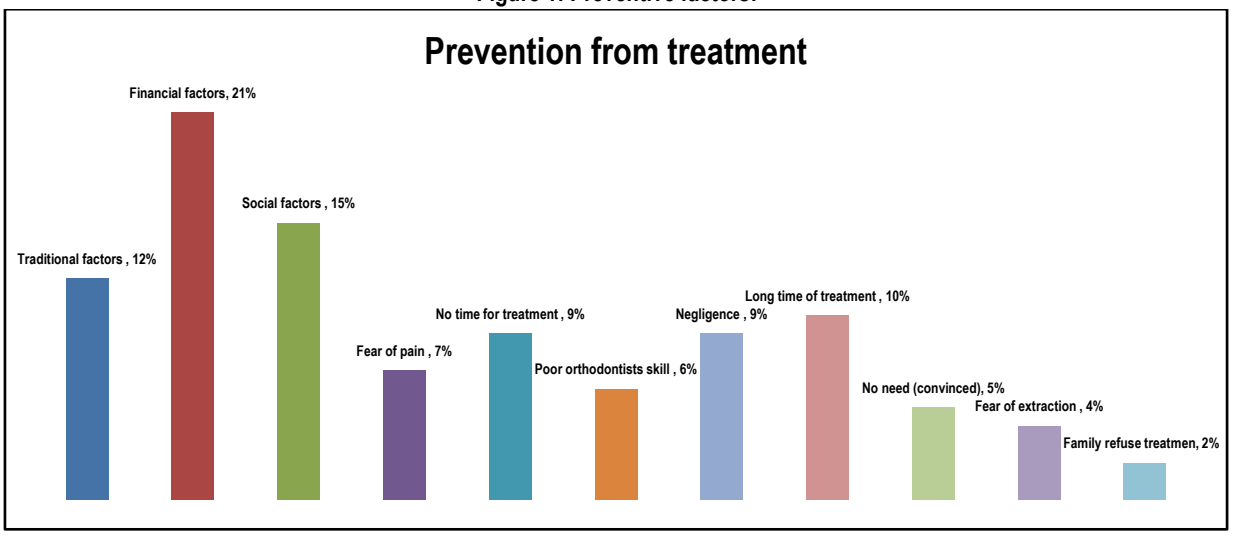


Figure 2: Opinions of assessors on which index was easier to use

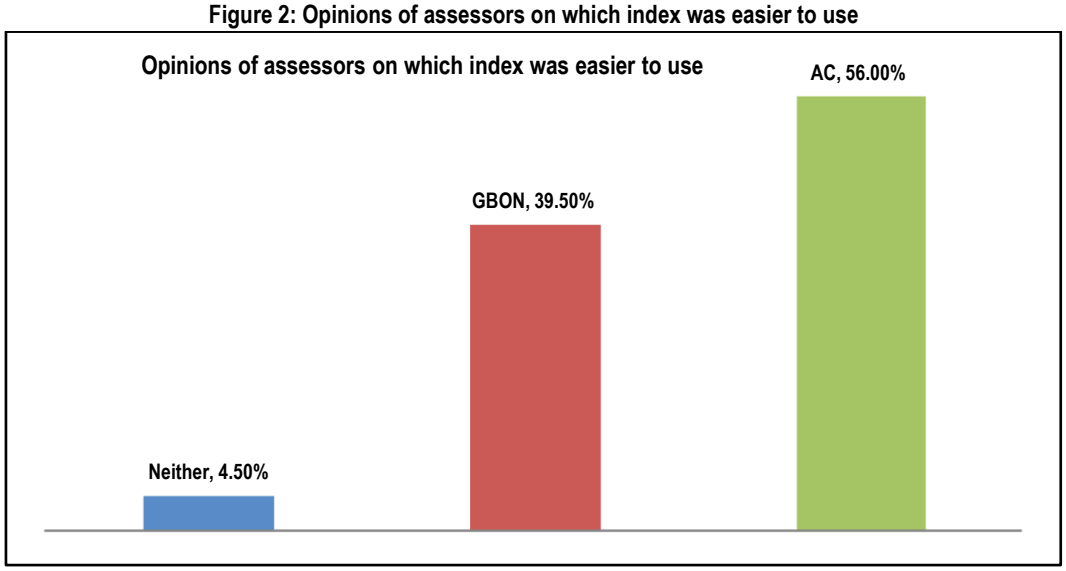
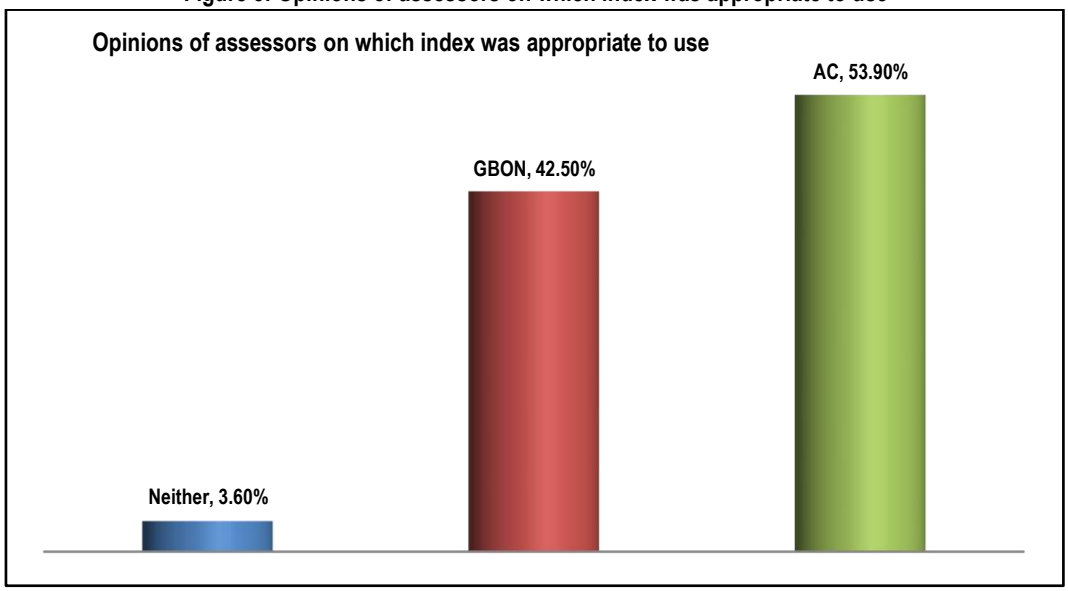


Figure 3: Opinions of assessors on which index was appropriate to use



DISCUSSION

Saudi Arabia currently does not place a significant premium on oral health, particularly the treatment of mal-occlusion. However, accurate and trustworthy information regarding the necessity for treatment for different oral problems and diseases in Saudi Arabia is required for purposes of future planning.

The findings of this study, which were in agreement other studies.[12] conducted a study on 293 children aged 11 to 14 recruited from orthodontic and pediatric dental clinics at the University of Washington and a community health clinic in Seattle, demonstrated that the orthodontic treatment needs related to dental health did not significantly affect the oral health-related quality of life. In these two investigations, the impact of malocclusion and its correction on dental health-related quality of life were both investigated. Amazingly, despite the differing backgrounds and sample size, similar results were found in this study. The findings of this study, however, were different from those of previous studies[2,5,13-15] that discovered a significant negative impact of malocclusion on the quality of life connected to oral health. A thorough evaluation of the literature on the effects of malocclusion and orthodontic treatment requirements on oral health-related quality of life was conducted by Liu et al.[2] The impact of various orthodontic treatment requirements on the oral health-related quality of life of 366 young Saudi Arabian adult orthodontic patients was evaluated by Hassan and Amin.[5] In a group of 148 university students, one researcher investigated the connection between dental esthetics and oral health-related quality of life.[16] The fact that the aforementioned studies all used bigger sample numbers and examined a wider range of malocclusions may be the reason why their findings differ from those of the current study.

According to the guidelines, those who had a definitive need for treatment scored differently on the OHIP depending on their gender. It was discovered that while males with the same treatment need scored higher on psychological discomfort, females with a definitive need for treatment scored higher on physical pain than other domains. This again conflicts with earlier research of a similar nature.[5,14]

Although the replies suggested no association between orthodontic treatment requirements and oral health-related quality of life, it was noteworthy to note that when the OHIP was assessed with the IOTN-DHC and gender, it was evident that the

standard deviations were significant. This may suggest that additional factors may have contributed to the consequences on oral health in this study and that malocclusion status alone did not affect the quality of life linked to oral health. In other research, confounding variables were controlled.[13-15]

Due to greater public awareness, university clinics, and an increase in orthodontists, orthodontic treatment has been observed to be more widely and easily accessible among the Sudanese community than it had been in earlier years.

In order to investigate the effects of malocclusion on the oral health-related quality of life of dental students, the current cross-sectional study, to our knowledge, is the first in Sudan to use both The Oral Health Impact Profile (OHIP) and the Index of Orthodontic Treatment Needs (Dental Health Component), taking advantage of the university dental lab facility for taking impressions and casting them. The subjects were chosen at random, therefore there was no room for bias in selection. The OHIP was chosen over all other oral health-related quality of life measures because it has been studied extensively[2,5,13,14] and focuses on three functional status dimensions: social, psychological, and physical, which together constitute four of the seven dimensions of quality of life.[13]

But some restrictions need to be addressed. The sample size was modest due to time and financial restrictions and given the wide range of malocclusions in the general population, it is possible that there was no apparent link. Consequently, a bigger sample size might be needed to support this research. The participants were dental students from UMST's faculty of dentistry who may have had better access to dental care and more expertise. Because of this, it's possible that the findings can't be applied to the group of young Sudanese adults who need orthodontic care.

CONCLUSION

The requirement for orthodontic treatment as it relates to dental health doesn't directly affect the quality of life related to oral health, but it does play a part. In general, men with definite and borderline treatment needs had considerably higher OHIP handicap scores than women in same category. Additionally, their overall OHIP ratings were greater. Contrarily, females who did not require therapy had greater effects on their overall oral health than did guys who did not require treatment.

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