

IMPACT OF DENTAL NEGLECT SCORE ON ORAL HEALTH AMONG PATIENTS RECEIVING FIXED ORTHODONTIC TREATMENT

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Abstract

Objective: To avoid periodontal health deterioration in those getting orthodontic treatment, stringent oral hygiene practises must be followed. In order to assess dental neglect and oral health among those having orthodontic treatment, the current study was initiated utilising the dental neglect scale (DNS) questionnaire

Materials and Methods: The current cross-sectional study was planned and carried out on the 80 individuals undergoing fixed orthodontic treatment. The study employed two questionnaires: a closed-ended one that inquired about patients' oral hygiene practises and a DNS that was followed by an evaluation of oral hygiene state using the Oral Hygiene Index Simplified. The data were statistically examined using the chi square test, with P<0.05 being regarded as a statistically significant value. After that, the data were examined using SPSS version 20.

Results: According to the current study, 63% of orthodontic patients, 26% of patients brushed twice daily, and 11% of patients brushed three times daily. Only 9% of the respondents said they utilised interdental aid, whereas roughly 25% said they used a soft-bristled brush. The data demonstrated a favourable relationship between DNS and the oral hygiene index simplified score with a P value of < 0.05.

Conclusion: The current study's findings suggest that orthodontic patients' decreased brushing, mouthwashing, and eating of sticky and hard foods is the outcome of self-neglect.

Keywords: Brushing, dental neglect, fixed orthodontic treatment, interdental aids, self-negligence

Introduction

In order to improve facial aesthetics, mastication, speech, and oral health as well as overall and oral health, orthodontic therapy places the teeth in the proper positions and improves the relationship between the occlusal and jaw. The benefits of orthodontic treatment are accompanied by risks and drawbacks. Periodontal issues have been observed to be the most frequent adverse reaction to orthodontic therapy. [1] Orthodontic patients may find

it challenging to adequately clean their mouths while wearing braces, which may contribute to irritated gingiva. Gingivitis and gingival enlargement seem to be the orthodontic treatments' most frequent short-term consequences on periodontal health. [2]

In order to prevent plaque from accumulating on braces and other orthodontic appliances, inflaming the gingiva, and further compromising the health of the periodontium, patients receiving orthodontic treatment must practise strict oral hygiene habits. The orthodontist has a dual responsibility to counsel patients on strategies for lowering plaque and to assess how well oral hygiene practises are performing in order to maintain periodontal health. However, the majority of patients undergoing orthodontic treatment frequently fail to maintain an appropriate level of plaque management despite the orthodontist's suggestions for the proper instructions. [3] Many of the patients having fixed orthodontic therapy who had their oral hygiene examined by Atassi and Awartani[4] did not receive the recommended oral home care. Terri [5] identified poor mouth hygiene as a factor in the poor tissue state of orthodontic patients. In order to inspire patients to maintain a proper level of oral hygiene throughout orthodontic therapy, it is essential for the orthodontist to be able to explain the significance of oral care practises to them. [3] In order to assess dental neglect and oral health among those having orthodontic treatment, the current study was initiated utilising the dental neglect scale (DNS) questionnaire.

Materials and Methods

The study included 80 patients (54 female and 26 male) between the ages of 18 and 30 who were receiving fixed orthodontic treatment, met the inclusion criteria, and were willing to participate in the design and conduct of the cross-sectional study. The project was approved by the ethical committee of the institute. The selection of study participants was done by simple random sampling. Patients who have been getting orthodontic treatment for more than three months qualified for inclusion. Patients normally are aware of their treatments when they initially start, but as time goes on, they begin to lose interest in them, hence this time period was selected. Any dental student undergoing fixed orthodontic treatment met the exclusion criteria in order to avoid bias in the study.

The study employed two questionnaires: a closed-ended one [5] that questioned about patients' oral hygiene practises [Table 1] and a DNS [Table 2][6] that was followed by an evaluation of oral hygiene status using the Oral Hygiene Index Simplified (OHIS). The reliability of the questionnaires (Cronbach's alpha) was evaluated in a pilot research before the main investigation began, and it was found to be 0.71 for questionnaire 1 and 0.69 for questionnaire 2. It was considered that when respondents filled out questionnaires, they fully understood the questions and did not communicate the data with any other respondents. Each participant graded six claims on a scale of Definitely Yes to Definitely No. Higher scores indicated greater disrespect for dental health. The DNS findings ranged from 6 to 30, with higher values suggesting greater disregard. The thus obtained data were evaluated using SPSS version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.). The data were statistically evaluated using the chi square test, with P <0.05 being considered a statistically significant value.

Results

There were 26 males and 54 women participants in the current study. In accordance with participant responses, [Table 1] 63% of participants reported brushing their teeth once day, 26% twice daily, and 11% three times daily. The majority of participants (53%), 26%, and 21% did not pay attention to the type of brush they were using. 53% of the participants used brushes with soft bristles. 13% used horizontal brushing, 17% used vertical brushing, 5% used circular brushing, and 35% used a combination of brushing techniques. Only 9% of respondents claimed to routinely use floss and interdental brushes, while 39% claimed to regularly clean their tongues. Mouthwash use was indicated by 42% of respondents, 24% once day and 18% twice daily. Regarding eating habits, 31% of respondents said they avoided fast food, 28% said they ate it twice a week, 26% said they occasionally did, 16% said they ate it once a week, and 56% said they ate hard foods, chewed gum, or drank soft drinks. 59% of respondents said they occasionally rinse their mouths after eating, 36% said they never do, and 5% said they used to rinse their mouths frequently. Gum bleeding was reported by 68% of them.

Table 2 revealed that 24% of respondents said they definitely keep up their at-home oral hygiene, 13% said they receive the dental care they require, 15% said they need it but put it off, 8% said they brush properly, only 8% said they definitely don't snack as much as they should, and 21% said they believed their dental health was important. The DNS score was divided into two categories: low (DNS score> 15) and high (DNS score >15) in order to compare DNS with OHIS.

According to the interpretation of OHIS scores [Table 3], in the group with lower dental neglect, 15% had good oral hygiene, 12% had fair oral hygiene, and 7% had poor oral hygiene, as opposed to the group with higher lower DNS, where 7% had good oral hygiene, 45% had fair oral hygiene, and 15% had poor oral hygiene. The data demonstrated a favourable relationship between DNS and the oral hygiene index simplified score with a P value < 0.05.

Questions	Response (%)
How often do you brush your teeth?	
Occasionally	
Once daily	63
Twice daily	26
Thrice daily	11
What type of brush do you use?	
Soft	26
Hard	21
Never noticed	53
Which technique do you use for brushing?	
Horizontal	13
Vertical	17

Table 1: Distribution of participants' response regarding oral hygiene practices (n=80)

Circular	5
Combined	35
Do you clean your tongue?	
Yes	39
No	61
Do you use interdental aids?	
Yes	9
No	91
Floss	2
Interdental brush	7
Do you use mouthwash?	
Yes	42
Once daily	24
Twice daily	18
How often you eat junk or fast food?	
Daily	-
Once in a week	16
Twice a week	28
Occasionally	26
No	31
Do you use ingest hard foods, chewing gum, or soft drinks?	
Yes	56
No planabional Research	44
Do you rinse your mouth after eating?	
Yes	64
Most of the time	5
Occasionally	59
No	36
Have you ever noticed your gums bleeding?	
Yes	68
No	32

Dental	1 (definitely	2 (yes) (%)	3 (in	4 (no) (%)	5	Р
neglect	yes) (%)		between)		(definitely	
scale			(%)		no) (%)	
I maintain	24	34	31	11		0.284
my home						
dental care						
I obtain the	13	21	56	10	-	1.465
dental care I						
should						
I need	15	32	23	17	13	0.34
dental care,						
but I						
postpone it						
I brush as	8	13	38	17	24	0.04
well as I						
should						
I restrain	8	11	15	20	46	0.01
snacking						
between						
meals as						
well as I						
should	terna	lona	l Re <i>s</i> e	arch	Jour	al
I consider	21	28	35	14	2	1.21
my den <mark>tal</mark>						
health to be						
important						

Table 2: Dental neglect score scale distribution (n=80)

Table 3: Comparison of dental neglect scale and oral hygiene index-simplified score

OHIS	DNS score <15	DNS score >15	Total	Ρ (χ2)
Excellent				< 0.05
Good, %	15 (12)	7(6)	18	
Fair, %	12(10)	50 (40)	50	
Poor, %	-	15 (12)	12	

Discussion

Dental aesthetics are the main lure for patients seeking orthodontic treatment. Orthodontic therapy improves dental health, appearance, and self-esteem, but if proper precautions are not taken throughout the treatment phase, orthodontic therapy's equipment could lead to unwanted side effects. In order for the patient undergoing orthodontic treatment to comprehend their responsibilities during the operation, they must be made aware of these potential risks. [7,8]

The results of the current study showed that 73% of the participants had high DNS, which was attributed to 45% of the participants' fair oral hygiene scores and 15% of the respondents' bad oral hygiene scores. The relationship a person has with their dentist is the most important factor that affects their dental health and attitude towards their dentition. This relationship needs to be mutually beneficial in order to maintain good oral health. [9] DNS provides an estimation of a person's level of dental health concern. This scale may be a useful substitute for capturing clinical data in oral health surveys when a lack of resources prevents an oral examination of the research population. [10] In order to support the DNS's translation into Hindi, Acharya et al.'s study [11] of a sample of Indian women was successful in diagnosing oral health neglect. Due to food particles accumulating in their teeth and braces, patients receiving orthodontic treatment notice significant changes in their oral health. This is because fixed appliances make it impossible for the patient to adequately clean their teeth, which increases the creation of plaque.

Gingivitis and enamel decalcification around fixed appliances are frequent outcomes of not implementing prophylactic strategies. [12] The key contributing factors to these periodontal issues include patient characteristics such past periodontal disease, increased susceptibility, and poor oral hygiene. [13] According to the current study, 63% of orthodontic patients, 26% of patients brushed twice daily, and 11% of patients brushed three times daily. Only 9% of the respondents said they utilised interdental aid, whereas roughly 25% said they used a soft-bristled brush. Mouthwash use was reported by 42% of respondents, 24% once day and 18% twice daily.

In the present study, chewing gum, hard meals, or soft drinks were consumed by about half of the participants. Patients' self-neglect is to blame for the current state of affairs. Understanding the various causes of self-neglect is essential to developing a healthy practising plan. These factors often involve a lack of environmental and personal cleanliness practises as well as a disregard for recommended health care routines. [14] Dentists urge patients undergoing orthodontic treatment to refrain from eating tough and sticky foods to prevent breaking of the orthodontic appliances.

Due to this, regular scaling procedures are required throughout this phase, as well as a comprehensive evaluation of the oral cavity. At the end of active orthodontic treatment and following the removal of appliances, the patient should get updated oral hygiene advice to lessen the possibility of recession. Therefore, it is the responsibility of the orthodontist to counsel patients on proper brushing technique and to suggest additional interdental cleaning instruments such an oral irrigator, dental floss, and interdental toothbrushes. [1] As a result, maintaining good oral health requires understanding of and a positive attitude towards oral health. [9]

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The present study's disadvantage is that the patients were selected belonged to a particular geological location and the majority of them were from medium class socioeconomic group since patients from high class often prefer private clinics and poor people cannot afford to spend money on aesthetics. To make conclusions, more research should be conducted using big sample sizes and participants drawn from different socioeconomic categories.

Conclusion

The current study's findings suggest that self-neglect is to blame for orthodontic patients' decreased brushing, mouthwashing, and eating of sticky and hard foods. Dental professionals must emphasise to patients the importance of maintaining good oral hygiene and controlling plaque, as well as the significance of ensuring patient compliance throughout the course of treatment, in order to prevent periodontal health from declining before and during the fixed appliance treatment.

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