

## IMPACT OF PERSONALITY TRAIT OF EMOTIONAL STABILITY ON ORAL PARAFUNCTIONAL HABITS

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### ABSTRACT

#### OBJECTIVES

To find the impact of emotional stability on oral parafunctional habits.

#### METHODOLOGY

A Cross-sectional descriptive study was conducted at the College of Dentistry, Sharif Medical and Dental College, Lahore, over five months, from July to November 2021. Data was collected using a medical questionnaire and a ten-item personality inventory scale (TIPI). The medical questionnaire comprised two sections with 11 items. The first section had six demographic statements, including age, gender, marital status, occupation, educational level and medical condition. The second section consisted of a pre-validated parafunctional habits questionnaire.

#### RESULTS

There was a non-significant difference in the scores of the personality trait of emotional stability across categories of oral parafunctional habits of nail-biting ( $p=0.093$ ), tooth grinding ( $p=0.192$ ), tooth clenching ( $p=0.055$ ), biting on hard objects ( $p=0.17$ ) and chewing gum ( $p=0.116$ ).

#### CONCLUSION

Emotional stability was most prevalent in individuals who denied having the habit of nail-biting, teeth grinding, tooth clenching and biting hard objects but neither agreed nor disagreed with having the habit of chewing gum.

**KEYWORDS:** Emotional Adjustment, Nail Biting, Chewing Gum, Tooth

## INTRODUCTION

Any disorder associated with an organ or organ system is known as parafunction, often characterized when an activity level exceeds normal physiological.<sup>1</sup> These parafunctional habits can be observed in the overall population and damage the dentition, masticatory system and temporomandibular joint when beyond normal physiological range.<sup>2</sup> In the current study, this term is applied to any hyperactivity of the stomatognathic system for example, bruxism, lip and nail biting, thumb sucking, self-injurious habits, teeth clenching, mouth breathing, and tongue thrusting.<sup>3,4</sup> Any action practised regularly, consciously or unconsciously, by individuals is termed habit.<sup>5</sup> Children and adolescents perform oral parafunctional habits daily, including continuous gum chewing, nail biting, diurnal clenching, and nocturnal tooth grinding.<sup>6</sup> Its etiology is diverse and is related to neurotransmissive mechanisms and psychological and emotional aspect.<sup>1</sup> Bruxism is the most common parafunctional habit and is further classified as sleep and awake bruxism, which can be probable and definitive. Furthermore, emotional stability has been a key factor in association with bruxism and other oral parafunctional habits.<sup>7</sup> It is

related to stress conditions, occlusal disorders, and allergies. Awake bruxism occurs more frequently in females than males ranging from 22.1% to 31% in the general population.<sup>8,9</sup> Sleep bruxism occurs in 14% of children and decreases to 8% and 3% in adults older and younger than 60, respectively.<sup>10</sup> Nail biting is associated with multiple psychological factors, including emotional stability, anxiety disorders, obsessive-compulsive disorder (OCD).<sup>5</sup> A study was conducted from May 2013 to July 2013. Convenience sampling was done in a high school in Chungnam, Korea. A -0.30 correlation between the level of emotional stability and oral parafunctional habits was recorded; from this study, it was concluded that our level of emotional stability is related to the occurrence of oral parafunctional habits, the more we are emotionally stable, the less prone we are to such practices and vice versa.<sup>11</sup> Emotional stability is a personality trait which could also influence the psychological status of an individual, including how the person responds to stressful situations, and it could be a leading factor in oral parafunctional activities.<sup>5</sup> The study aimed to find the impact of emotional stability on oral parafunctional habits.

## METHODOLOGY

A Cross-sectional descriptive study was conducted at the College of Dentistry, Sharif Medical and Dental College, Lahore, over five months, from July to November 2021. The sampling technique used was Convenience sampling. Ethical approval was obtained from Sharif Medical Research Center (SMRC) (No. SMDC/SMRC/205-21). A sample size of 200 was calculated with the help of WHO sample size determination software, keeping the confidence level of 95% with an anticipated population proportion of 52.86% with teeth clenching and an absolute precision of 0.07.<sup>12</sup> Individuals with any systemic illness, history of alcohol consumption, or smoking will be excluded from the study, while individuals of all ages, genders and oral parafunctional habits were included. Data was collected using a medical questionnaire and a ten-item personality inventory scale (TIPI). The medical questionnaire comprised two sections with 11 items. The first section had six demographic statements, including age, gender, marital status, occupation, educational level and medical condition. The second section consisted of a pre-validated parafunctional habits questionnaire with a Cronbach alpha value 0.74.<sup>5</sup> The responses for the parafunctional habit questionnaire were recorded as "1" strongly disagree, "2" disagree, "3" neither agree nor disagree, "4" agree and "5" strongly agree". Data was collected using the Ten Item Personality Inventory scale, a pre-validated questionnaire.<sup>13</sup> SPSS 23 was used for statistical analysis. P values less than equal to 0.05 was considered significant. Nominal data were presented as frequency and percentages, while numerical data were presented as mean and standard deviation. Kruskal Wallis test was to find the difference in the emotional stability scores across groups of oral parafunctional habits.

## RESULTS

A cross-sectional descriptive study was conducted on 200 participants with a mean age of 24.93±6.759 years out of which 29% were males while 71% were females.

**Table 1: Difference in the Scores of Emotional Stability across Categories of Oral Parafunctional Habits of Nail Biting and Teeth Grinding**

| Personality Trait   | Oral Parafunctional Habits | N                          | Mean Rank | Chi-Square | df    | P-Value |       |
|---------------------|----------------------------|----------------------------|-----------|------------|-------|---------|-------|
| Emotional Stability | Nail biting                | Strongly disagree          | 113       | 104.25     | 7.952 | 04      | 0.093 |
|                     |                            | Disagree                   | 33        | 113.89     |       |         |       |
|                     |                            | Neither agree nor disagree | 18        | 87.00      |       |         |       |
|                     |                            | Agree                      | 21        | 92.95      |       |         |       |
|                     |                            | Strongly agree             | 15        | 69.57      |       |         |       |
|                     | Teeth grinding             | Strongly disagree          | 102       | 107.60     | 6.092 | 04      | 0.192 |
|                     |                            | Disagree                   | 50        | 101.38     |       |         |       |
|                     |                            | Neither agree nor disagree | 12        | 77.25      |       |         |       |
|                     |                            | Agree                      | 28        | 83.07      |       |         |       |
|                     |                            | Strongly agree             | 08        | 100.31     |       |         |       |

Table 1 shows a statistically non-significant difference in the scores of personality traits of nail biting and teeth grinding across categories of oral parafunctional habits of nail biting and teeth grinding. The highest mean rank score of emotional stability for nail biting and teeth grinding was for individuals who disagreed and strongly disagreed with having the habits, respectively, while the least was seen in those who strongly agreed and neither agreed nor disagreed with having the habits, respectively as shown in table 1.

**Table 2: Difference in the Scores of Emotional Stability across Categories of Oral Parafunctional Habits of Teeth Clenching and Biting on Hard Objects**

| Personality Trait   | Oral Parafunctional Habits | N                          | Mean Rank | Chi-Square | df     | P-Value |       |
|---------------------|----------------------------|----------------------------|-----------|------------|--------|---------|-------|
| Emotional Stability | Teeth clenching            | Strongly disagree          | 83        | 109.86     | 9.240  | 04      | 0.055 |
|                     |                            | Disagree                   | 41        | 107.90     |        |         |       |
|                     |                            | Neither agree nor disagree | 16        | 70.38      |        |         |       |
|                     |                            | Agree                      | 51        | 89.21      |        |         |       |
|                     |                            | Strongly agree             | 09        | 98.00      |        |         |       |
|                     | Biting hard objects        | Strongly disagree          | 93        | 109.37     | 12.114 | 04      | 0.17  |
|                     |                            | Disagree                   | 41        | 112.39     |        |         |       |
|                     |                            | Neither agree nor disagree | 24        | 75.85      |        |         |       |
|                     |                            | Agree                      | 35        | 82.74      |        |         |       |
|                     |                            | Strongly agree             | 07        | 86.36      |        |         |       |

Table 2 shows a statistically non-significant difference in emotional stability scores across categories of oral parafunctional habits of tooth clenching and biting hard objects. It was seen that the highest mean rank score of emotional stability was seen in individuals who

strongly disagreed with having the habit of tooth clenching and those who opposed having the habit of biting hard objects, while the least mean rank score of emotional stability was seen for individuals whom neither agreed nor disagreed to having both the habits as shown in table 2.

**Table 3: Difference in the Scores of Emotional Stability across Categories of an Oral Parafunctional Habit of Chewing Gum**

| Personality Type    | Oral Parafunctional Habits | N  | Mean Rank | Chi-Square | df | P-Value |
|---------------------|----------------------------|----|-----------|------------|----|---------|
| Emotional Stability | strongly disagree          | 81 | 105.83    | 7.395      | 04 | 0.116   |
|                     | disagree                   | 56 | 91.60     |            |    |         |
|                     | neither agree nor disagree | 38 | 114.50    |            |    |         |
|                     | agree                      | 20 | 77.83     |            |    |         |
|                     | strongly agree             | 05 | 98.20     |            |    |         |

Table 3 shows a statistically non-significant difference in emotional stability scores across the categories of an oral parafunctional habit of chewing gum. It was seen that the highest mean rank score of emotional stability was for individuals who neither agreed nor disagreed with having the habit, while the least was seen for those who agreed to have the habit, as shown in Table 3

## DISCUSSION

When someone is emotionally stable, they tend to be even-tempered and composed, especially in the face of some sort of provocation. It is crucial to comprehend how emotional stability affects oral parafunctional habits in particular. Any physical action that a bodily part engages in outside of its primary function is referred to as a parafunctional habit. Parafunctional oral behaviors include any abnormal behavior, such as clenching or grinding of teeth, tongue pushing, thumb sucking, or nail biting.<sup>5</sup> The use of oral structures for purposes other than mastication, deglutition, speaking, and respiration is known as a parafunctional oral habit. This document focuses on hard object biting, lip biting, teeth grinding, and nail biting. In order to provide supportive therapy for the prevention of such behaviors, it is essential to comprehend the underlying cause. Although its etiology is extremely varied, it is intimately linked to the stimulation of the central nervous system and its neurotransmission mechanisms, in addition to psychological and emotional factors. According to the research available, psychiatric causes for parafunctional behaviors have been suggested.<sup>8</sup> Among the most typical parafunctional behaviors is bruxism, usually referred to as "tooth grinding." Awake bruxism, as well as sleep bruxism is the other two kinds of bruxism. Bruxism frequently causes issues like attrition, headaches, and abnormalities of the temporomandibular joint.<sup>14</sup> Nail biting as a form of

self-destruction and onychophagy are the most extreme manifestations of this disorder. J Biting one's nails is a sign of anxiousness made worse by stressful situations and is therefore interpreted as an emotional defence mechanism.<sup>15</sup> In our study, we concluded that there is no statistically significant variation in the personality features of nail biting and teeth grinding between the various categories of oral parafunctional habits. People who disagreed and strongly disagreed with possessing the habits, respectively, had the overall average rank scores for emotional stability for nail biting and teeth grinding, whereas those who strongly agreed yet neither agreed nor disagreed with possessing the habits, combined, had the lowest mean rank scores. In contrast, a survey done in Saudia reported the frequency of nail-biting (36%) and grinding (32%) in people having anxiety issues. They further added that an emotionally secure individual was far less prone to engage in grinding (24.9%) and nail-biting (28.4%).<sup>5</sup> As for the clenching of teeth and biting on hard objects, it has been reported by our data that differences in emotional stability ratings between categories of oral parafunctional habits, such as clenching teeth and biting hard objects, are not statistically significant. People who strongly disagreed with having the habit of clenching their teeth and those who disagreed with having the habit of biting hard objects showed the highest mean rank scores of emotional stability, whereas those who neither agreed nor disagreed with having the two habits showed the lowest mean rank scores of emotional stability. Gum chewing and object/lip biting were the two most common parafunctional behaviors, with grinding coming in last (31.8%). The results are reinforced by a study conducted in Poland with college students, which shows that the most common oral parafunctional behaviors are chewing gum and grinding.<sup>16</sup> While in our study, the analysis showed that Differences in emotional stability scores between groups of the oral parafunctional habit of gum chewing are not statistically significant. People who hardly agreed or disagreed with possessing the habit had the highest mean rank score for emotional stability, whereas individuals who agreed to the behavior had the lowest. There is a connection between parafunctional behaviors and anxiety, and the intensity of anxiety affects how common these behaviors are. The present study found a substantial positive correlation between oral parafunctional practices and the intensity of anxiety disorders. Alkan and his associates validated this conclusion by examining the relationship between psychological well-being and oral behaviors and discovered that individuals with parafunctional behaviors scored better on anxiety and sadness scales.<sup>17</sup> On the other hand, a study conducted by Alamoudi

involving Saudi youngsters established no connection between oral parafunctional practices and emotional status.<sup>18</sup> It is extremely crucial as dentists to evaluate the personality of individuals and consider it as an important part of the treatment plan when treating patients with oral health problems owing to oral parafunctional habits.

## LIMITATIONS

A larger sample size and a multicenter study would have helped us unravel more findings.

## CONCLUSIONS

Emotional stability was most prevalent in individuals who denied having the habit of nail biting, teeth grinding, tooth clenching and biting hard objects but neither agreed nor disagreed with having the habit of chewing gum.

**CONFLICT OF INTEREST:** None

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