

Original Article

Oral Parafunctional Habits and Their Association with Personality Trait of Conscientiousness

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ABSTRACT

Background: Personality traits significantly influence various behaviors, including oral parafunctional habits. Conscientiousness, characterized by organization, self-discipline, and goal orientation, is one of the Big Five personality traits. This study examines the relationship between conscientiousness and common oral parafunctional habits such as nail biting, teeth grinding, tooth clenching, biting hard objects, and chewing gum.

Objective: To assess the effect of conscientiousness on oral parafunctional habits.

Methods: A descriptive cross-sectional study was conducted from July to November 2021 at Sharif Medical City. Participants completed the Ten Item Personality Inventory (TIPI) to assess conscientiousness. Ethical approval was obtained prior to the study. Data were analyzed using SPSS version 23, with significance set at $p \leq 0.05$.

Results: The scores of conscientiousness varied insignificantly across subgroups: nail biting ($p=0.137$), teeth grinding ($p=0.629$), tooth clenching ($p=0.348$), biting hard objects ($p=0.082$), and gum chewing ($p=0.262$). Conscientiousness was most prevalent in participants who engaged in nail biting, teeth grinding, tooth clenching, and gum chewing, and less prevalent in those who denied biting hard objects.

Conclusion: The conscientiousness personality trait was most prevalent in individuals who engaged in nail biting, teeth grinding, tooth clenching, and gum chewing. Conversely, it was less common among those who denied biting hard objects.

Keywords: Conscientiousness, nail biting, oral parafunctional habits, personality trait, teeth grinding.

INTRODUCTION

Personality trait of conscientiousness has been explained in the literature as a combination of organization, self-discipline, and a focused motivation to achieve goals (1,2). According to the Big Five theory of personality, conscientiousness is one of the five most significant attributes (1,3,4). Habits are practices involving the conscious or unconscious repetition of certain actions. In the context of parafunctional habits related to the oral cavity, bruxism and nail biting are considered highly prevalent (2,5). Parafunctional oral habits refer to the use of oral structures for activities other than mastication, swallowing, phonation, and breathing. This study focuses on behaviors such as nail biting, teeth grinding, lip biting, and biting hard objects. Understanding the underlying causes of these behaviors is crucial for developing effective treatment modalities. The origins of these practices are rooted in the nervous system and its transmission processes (3,6).

Family and work obligations, among other sources of stress, have been linked to awake bruxism (AB). The term "Sleep Bruxism" (SB) is used to describe teeth grinding that occurs during sleep, whether during the day or night. Oromandibular behavior disorder (SB) is a form of sleep-related movement disorder characterized by repetitive jaw movements, such as teeth grinding and clenching, during the night (4,7). Nail biting, also known as onychophagia or onychophagy, is a prevalent behavioral pattern among individuals of all ages. Onychophagy is a type of nail disease caused by excessive biting of one's nails (6,8,9,10,11).

The objective of this study was to assess the effect of conscientiousness on oral parafunctional habits, providing insights into how personality traits may influence these behaviors and informing potential therapeutic approaches.

METHODS

Ethical approval for the study was obtained from the Sharif Medical and Dental College ethical committee (SMDC/SMRC/205-21, dated 13-11-2021). The study, conducted at Sharif Medical City in Lahore, was a descriptive cross-sectional design carried out over five months, from July to November 2021. Questionnaires were utilized to assess oral parafunctional habits, and the Ten Item Personality Inventory (TIPI) scale was employed to evaluate the personality trait of conscientiousness. The TIPI demonstrated a Cronbach's alpha value of 0.745.

The sample size was determined to be 200, based on a precision of 0.07, a prevalence of tooth clenching in individuals at 52.8%, and a confidence level of 95% (12). The questionnaire for assessing parafunctional habits used a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The TIPI scale responses ranged from 1 (disagree strongly) to 7 (agree strongly) (13). Data collection commenced after obtaining informed consent from the participants. The study included individuals of both genders, aged 18 years and above, with a history of parafunctional habits, while excluding those with systemic illnesses.

Convenient sampling was employed for data collection. The statistical analysis was performed using SPSS version 23, with p-values ≤ 0.05 considered significant. The score distribution and differences in the personality trait of conscientiousness across groups of oral parafunctional habits were analyzed using the Kruskal-Wallis test. This methodological approach aimed to provide a comprehensive assessment of the impact of conscientiousness on oral parafunctional habits, contributing to the understanding of these behaviors in a medical research context.

RESULTS

The total number of participants was 200 participants with more females (71%) as compared to males (29%). The mean age of participants was 24.93 ± 6.759 years. The mean rank scores (MRS) has been shown in tables below.

Table 1: Conscientiousness score difference across the subgroups of nail biting

Personality trait	Nail biting	Total number	MRS	χ^2	P value
Conscientiousness	Disagree strongly	113	103.48	6.980	0.137
	disagree	33	96.55		
	neither agree nor disagree	18	104.14		
	agree	21	73.43		
	strongly agree	15	120.27		

Table 1 The highest score of conscientiousness was seen in participants who were very certain that they had nail biting but the differentiation of scores was insignificant as shown in table 1.

Table 2: Conscientiousness score difference across the subgroups of tooth grinding habit

Personality trait	Teeth grinding	Total number	MRS	χ^2	P value
Conscientiousness	Disagree strongly	102	105.45	2.586	0.629
	disagree	50	93.47		
	neither agree nor disagree	12	104.83		
	agree	28	90.66		
	strongly agree	8	109.31		

Table 2 shows an insignificant difference in the scores of conscientiousness across the subgroups of tooth grinding. The participants who strongly agreed that they practiced tooth grinding had the highest mean rank score as shown in table 2.

Table 3: Conscientiousness score difference across the subgroups of tooth clenching

Personality trait	Teeth clenching	Total number	MRS	χ^2	P value
Conscientiousness	Disagree strongly	83	106.89	4.455	0.348
	disagree	41	88.89		
	neither agree nor disagree	16	84.81		
	agree	51	101.91		
	strongly agree	9	114.39		

Table 3 The maximum score was seen in participants who affirmed strongly that were in the habit of tooth clenching but the differentiation in score was not significant as shown in table 3.

Table 4: conscientiousness score difference across the subgroups of habit of biting hard objects

Personality trait	Habit of Biting hard objects	Total number	MRS	χ^2	P value
Conscientiousness	Disagree strongly	93	111.66	8.279	0.082
	disagree	41	84.68		
	neither agree nor disagree	24	86.77		
	agree	35	101.07		
	strongly agree	7	89.07		

Table 4 shows that the participants who firmly denied having the habit of biting hard objects possessed the maximum score but the differentiation in scores across groups was insignificant as shown in table 4.

Table 5: Conscientiousness score across the subgroups of habit of chewing gum

Personality trait	Habit of chewing gum	Total number	MRS	χ^2	P value
Conscientiousness	Disagree strongly	81	102.54	5.261	0.262
	disagree	56	87.99		
	neither agree nor disagree	38	113.28		
	agree	20	98.08		
	strongly agree	5	120.10		

Table 5 shows an insignificant differentiation of conscientiousness scores among subgroups of chewing gum. The participants who affirmed firmly to having the habit of chewing gum had a higher score as can be seen in table 5.

DISCUSSION

The study of parafunctional habits, characterized by abnormal and hyperactive behavior of the orofacial region, reveals various influences, including personality traits (5). Among the many factors, personality type has been significantly associated with the development and prevalence of these habits (14, 15, 16). The current study identified that individuals who strongly agreed to practicing nail biting had the highest conscientiousness score (120.27). This finding aligns with previous research, where participants with high conscientiousness scores reported chewing gum (78.1%) as the most prevalent oral parafunctional habit, followed by biting hard objects (52.9%), tooth clenching (39.3%), nail biting (32.3%), and tooth grinding (27.8%) (5). Nail biting has been linked to psychiatric illnesses such as OCD and ADHD, indicating its exacerbation during stress and anxiety as an emotional release mechanism (11, 17).

Our study also highlighted that participants with high conscientiousness scores strongly agreed to the habit of tooth grinding (mean rank score 109.31) and tooth clenching (mean rank score 114.39). This contrasts with another study where 14% of children with high conscientiousness denied habitual tooth clenching, while 9.3% acknowledged occasional engagement in the habit (18). Additionally, individuals who denied biting hard objects had high conscientiousness scores (mean rank score 111.66), whereas chewing gum was associated with a lower conscientiousness score (mean rank score 109.31).

The conscientiousness personality trait has been reported to positively impact oral health and quality of life. One study demonstrated a significant relationship between conscientiousness and oral health-related quality of life, indicating better overall oral health and quality of life among individuals with higher conscientiousness scores (19).

Strengths of the current study include the use of standardized questionnaires and a robust sample size, allowing for a comprehensive assessment of the relationship between conscientiousness and oral parafunctional habits. However, limitations such as the cross-sectional design preclude causality inference, and the reliance on self-reported data may introduce response bias.

In conclusion, the study contributes to the understanding of how conscientiousness influences oral parafunctional habits. The findings suggest that individuals with higher conscientiousness are more likely to engage in certain parafunctional habits, potentially due to underlying stress and emotional regulation mechanisms. These insights emphasize the need for targeted interventions addressing both psychological and behavioral aspects to mitigate the prevalence of these habits. Further longitudinal research is warranted to explore causal relationships and the effectiveness of such interventions in diverse populations.

CONCLUSION

The conscientiousness personality trait was most prevalent among individuals who strongly affirmed habits of nail biting, teeth grinding, clenching, and chewing gum, and less common among those who denied biting hard objects. This study underscores the significant influence of conscientiousness on oral parafunctional behaviors, suggesting a potential link between personality traits and stress-related oral habits. However, the study's limitation lies in its focus on a single personality trait. Including a broader range of personality traits could have provided a more comprehensive understanding of their impact on oral parafunctional habits. Future research should explore these relationships further to develop targeted interventions that address both psychological and behavioral aspects, ultimately improving oral health outcomes.

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