

Bruxism: Associated Factors Among Software Professionals

Abstract

Background: software professionals are bound to have massive impact on their healthy living as they perform their work in a very stressful environment. Many studies have related bruxism with stress. Thus, this study is conducted to know associated factors of bruxism among software professionals. **Aim:** to know the association factors of bruxism among software professionals. **Methods:** a total of 232 randomly selected software professionals working for NASSCOM registered Bangalore based software companies were considered for the study. A questionnaire was specially developed to know the study subject's demographic data, self-reported bruxism data, details on personal habits and other details. The bruxism was recorded as per the ASDA clinical research diagnostic criteria for bruxism. The data was subjected to statistical analysis. **Results and conclusion:** The results of this study raise an important concern about the risk of highly stressful life with job demanding for skills; hard and fast work, sleep disorders, restless leg syndrome, cigarette smoking for individuals with bruxism.

Key Words

Bruxism; software professionals; association factors

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INTRODUCTION

A booming software industry attracted the young Indians because of its handsome salary, fat perks, onsite opportunities and high standard of living. But the charm of the industry no longer is appreciated instead cursed for raising cost of living in metro cities, fluctuant job opportunities, fear of job security and number of job related health issues. These health problems if ignored can prove debilitating and can cause crippling injuries forcing one to change one's profession. Software people's hardships like boundary-spanning activities characterized by strict deadlines, differing time zones, interdependency in teams, increased interaction with clients, and extended work hours makes the work place a very hard road to cross rather a cakewalk as any other outsider would think. Hence the software industry is considered by many as a very stressful place of work.^[1-5] Medical professionals relate bruxism with stress^[6-10] and in our previous study,^[11] the psychosocial stress level

depending on the work character of the software professionals was determined and the study showed a strong relation between stressful software professionals with bruxism. Not only stress but many studies relate bruxism with other factors^[12] like alcoholism,^[13] restless leg syndrome,^[14] smoking,^[15,16] neuro diseases,^[17-21] medications,^[19] local factors like dental erosion,^[22] occlusal and TMJ disturbances.^[23,24] So in the present study attempt is made to analyze the relation between bruxism and its association factors. Considering the fact that abnormal oral habits have ill effects on dento-alveolar structure, it is necessary to take major steps and care to cure these habits and prevent complications, which can be achieved only with proper statistical information. Thus, this study is conducted to analyze the possible association factors of bruxism among software professionals.

OBJECTIVE

To analyze the relation of bruxism among software professionals with its associated risk factors.

Table 1: Mean pattern of basic characteristics in relation to bruxism. (Mean ± SD)

Basic characteristics	Bruxism		P value
	Absent	Present	
Age in years	25.18 ± 2.29	26.46 ± 2.77	0.081
Sex	Male=80(53.6%) Female=69 (46.3%)	Male=44(53%) Female=39(46.9%)	0.088+
Job experience	2.55 ± 1.84	2.79 ± 1.05	0.081+
Work experience	1.01 ± 0.68	1.02 ± 0.92	0.868
Working hours	9.29 ± 0.25	9.33 ± 0.24	0.275

Table 2: Mean pattern of stress as risk factors in relation to bruxism (Mean ± SD)

Risk factors	Bruxism		P value
	Absent	Present	
Stress	20.48±5.32	23.16±3.72	<0001**

Table 3: Mean pattern of risk factors of work related stress in relation to Bruxism (Mean ± SD)

Risk factors	Bruxism		P value
	Absent	Present	
Skill	12.92±2.62	14.14±1.21	<0.001**
Decision	5.56±1.12	5.49±0.90	0.661
Job demand	11.48±1.54	11.37±2.03	0.813
Work characters	29.91±3.54	31.01±2.22	0.011*

Table 4: Association of smoking in relation to Bruxism

Smoking	Bruxism (p<0.001**)	
	Absent	Present
No	81.6%	18.4%
Yes	12.1%	87.9%

Table 5: Association of alcohol in relation to Bruxism

Alcohol	Bruxism	
	Absent	Present
No	53.2%	48.9%
Yes	46.8%	51.1%

Table 6: Association of restless leg syndrome, sleep disorders in relation to Bruxism

Restless leg syndrome 148(63.7%)	Bruxism	
	Absent 65(43.9 %)	Present 83 (56.1 %)
Sleep disorders 187 (80.6%)	54 (29.3 %)	133(70.7%)

MATERIAL AND METHOD

This study was conducted to know the prevalence of bruxism among software professionals and to analyze the possible association factors for bruxism among this study group. A total of 232 randomly selected software professionals working for NASSCOM registered Bangalore based software companies were considered for the study.

Inclusion criteria

- ✓ Software professionals with minimum 1 year experience

- ✓ Software professionals with maximum 5year experience
- ✓ Software professionals working for ongoing projects.

Exclusion criteria

- ✓ Less than 1 year experience (most of them will be in training period)
- ✓ More than 5 years' experience (most of them will be in entering different work profile-administration)
- ✓ Bench pool workers.

In this study the required data was collected and recorded using printed proforma which consisted of three parts: first part is the questionnaire specially developed to know the study subject's demographic data, work characteristics, stress measurement, self-reported bruxism data, details on personal habits and other details. Work characteristic's was assessed using karasek's scale.^[25] It is based on a model known as the "job strain" model. The scale consists of eleven questions to measure job character-decision latitude and psychological work load demands. Decision latitude is explained by skill discretion and decision making authority available to the worker. Skill discretion is measured by six items such as keep learning new things, can develop new skills, job requires skills, task variety, repetitious, requires creativity. Decision authority, measured by three items, such as "have freedom to make decisions", "choose how to perform work", and "have a lot of say on the job" the second part measures psychological job demands, defined by five items such as excessive work, conflicting demands, insufficient time to work, work fast and work hard. Assessment of psychosocial stress in this study was investigated by a questionnaire based on the Reeder scale.^[25] The Reeder scale uses four statements experienced in everyday stressful situations as "usually tense or nervous", "daily activities are extremely trying and stressful." The respondents should indicate whether each of the statement describes them. Each question had four alternative responses, which were coded using Likert-like scale. A simple summation method was used for scoring. Second part was provided to record the details of interview of the subject by the investigator where the subject was interviewed regarding the medical and drug history, third part was provided to record the details of the clinical examination. The bruxism was recorded as per the ASDA clinical research diagnostic criteria for bruxism.^[26] The criteria for the presence of Bruxism accordingly is as follows;

- ✓ Retruded-contact position (RCP) to intercuspal contact position (ICP) slide length (normal value <2mm).
- ✓ Dental attrition, degree of attrition, location of attrition.
- ✓ Correlation of subject's bruxing pattern in the clinical examination to the attrition pattern.
- ✓ Occlusal disturbances.
- ✓ Cross bite.

- ✓ Muscular tension in relation to: lateral pterygoid and temporalis

Clinical examinations were carried out at the company's rest room or lounge with sufficient natural light. Subjects were examined in the resting chair where the subjects were made to sit upright for examining the retruded-contact position (RCP) to intercuspal contact position (ICP) slide length and then made relax on the chair for further examination. The chair was placed in front of a well-lighted window, but not in direct sunlight, with the subject facing the window. No artificial dental illumination was used. The examinations were carried out with the aid of an ordinary mouth mirror and a graduated probe. The data was subjected to statistical analysis.

RESULTS

There was not much of difference between the bruxers and non bruxers in relation to the basic characteristics like age, sex, job experience, work experience and working hours and showed no significance (Table 1). The associated factors significant in relation to bruxism were stress (Table 2), job requiring skills and work character (Table 3), cigarette smoking (Table 4). Restless leg syndrome, sleep disorders were significantly associated with bruxism (Table 6).

DISCUSSION

Nocturnal bruxism is classified as being in the parasomnia group of sleep disorders by the ICSD.^[26] It occurs usually in non-rapid eye movement sleep (NREM) sleep stages, mostly in stage 2 sleep, and during sleep-stage shifts. However, it can also occur during REM sleep and, in that case, is associated with facial and dental pain more frequently. A number of methods such as questionnaires, tooth wear evaluation, interviews, and electromyography and muscle symptoms have been proposed for diagnosing bruxism. In the study sample, prevalence of bruxism was 35.5% with no gender difference.^[11] Bruxism rarely occurs alone. In this study, it is associated with psychological variables like stressful life (mean±sd=23.16±3.72) with job demanding for skills, hard and fast work were also significantly related to tooth grinding and this is in line with the previous findings of Ahlberg *et al.*,^[6-10] who claimed the media professionals were more prone to bruxism as there was lot of stress due to technological change from analog to digital system. It is also associated with sleep disorders (70.7% of bruxers) and RLS (44.9% of bruxers), this is in line with the previous findings of

Ahlberg *et al.*,^[6-8] significant associations (87.9% of smokers showed bruxism) is found with the daily use of tobacco in the form of cigarettes. This finding is in line with the study of Madrid *et al.*,^[15] who showed the daily smokers were more likely to exhibit bruxism. The data showed a no significant correlation for the amount of alcohol intake, in support of previous studies by Ohayon *et al.*^[12] Explanation might be the difference in the population. Our study subjects are software professionals, where the rate of chronic and dependent alcoholism was less as in the other studies. The results are not in line with the association of bruxism with any drugs or patho physiological conditions as the study group are healthy individuals working in a competitive environment. Further, as smoking, RLS, sleep disorders are all related to stress; Jari *et al.*^[6-10] So, here stress can be considered as the dominant etiologic factor in the present study population.

CONCLUSION

The results of this study raise an important concern about the risk of highly stressful life with job demanding for skills; hard and fast work, Sleep disorders, Cigarette smoking for individuals with bruxism. However, longitudinal studies and studies with larger samples are needed to confirm associations described in this investigation.

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