

Evaluation Of The Periodontal Disease In Individuals Involved In Night Duties

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Abstract: Background: Shift duty or night duty is usually associated with various problems in the oral and general health of the individuals. The present study was planned to find the incidence of periodontal disease in night duty workers. Methodology: The study was carried on individuals involved in night duties as their profession. A total of 109 participants were involved in the study group. Also a control group of 109 individuals, who were working in day time, were taken. All the participants involved in the study were males. The periodontal condition of the study population was examined using periodontal disease index (PDI) and the scoring was done according to standard criteria. Statistical analysis was performed with the help of IBM SPSS statistics 20 by applying student's t test. Results: The comparison of the periodontal condition of the control group and the study group had shown a statistically significant difference. This shown that the individuals involved in the night duties have more incidences of periodontitis. Conclusion: The results of the present study added focus on the oral health of the individuals with profession having shift duties or night duties. [Reddy V NJIRM 2016; 7(1):99-100]

Key Words: Night duty workers, Periodontitis, Stress.

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Introduction: Shift work is defined as "any work organization of working hour that differs from the traditional diurnal work period". Thus a night duty includes in the shift duties and is the work that happens between 7 pm and 6 am. Several studies have shown that the individuals involved in shift and night duty can perceive the world differently from that of the others and can cause several problems for the employee.¹ The problems can be in terms of physical and mental health, work performance/effectiveness, safety and social life. Some individuals can tolerate the shift work well, while others can develop various health problems, due to altered or stressful life cycles.¹

The development of different periodontal diseases have multiple pathogenesis caused by various microorganisms and their metabolic products, which leads to the destruction of periodontal ligament, alveolar bone with gingival recession or pocket formation or both. The onset, progress and severity of the pathogenic mechanisms in periodontal disease is determined by the host response of the individual, but also modified by the various factors.^{2,3} Some of the risk or modifying factors are oral hygiene, advancing age, smoking and systemic diseases. Also the relationship between psychological stress, psychosocial factors and periodontal disease has been well established.²⁻⁴

Thus the present study was done to find out the incidence of the periodontal disease in individuals with shift or night duty.

Material and Methods: their profession. It included watchman at private bungalows, bank security guards, performing shift duties in factories etc. The study group included all male participants. For comparison, control group was taken of 109 male individuals, who were involved in the day time duties.

The presence of periodontal disease was studied with the help of periodontal disease index (PDI). The scoring was done according to the standard scoring system designed for the index study. Each participant was examined only once and the scores were written. The scores were range from 0 to 6. All the included participants in the study were well informed about the study and informed consent was taken from all the participants.

Statistical analysis was performed with the help of student's t test, using IBM SPSS statistics 20. Descriptive statistics were calculated; mean scores and standard deviation were obtained.

Results: The study was done on 109 participants as a study group and other 109 as a control group. (Table 1) The average scores of the control group and the study group were compared and have shown a difference which is found to be statistically significant. This shown that the individuals involved in the night duties had more occurrence of periodontal disease as compared to control group. (Table 1)

Table 1: Mean scores of the periodontal disease index in control and study group.

Group	Number of participants	Mean scores
Control group	109	1.45
Study group	109	3.19

Table 2: Comparison of the index scores between control group and the study groups

Group	n	Mean \pm SD	T value	P value
Control group	109	1.45 \pm 0.545	17.2478	P<0.001*
Study group	109	3.19 \pm 0.902		

* p value is statistically highly significant. SD = Standard deviation.

Discussion: Nowadays night duties have become a routine feature in various hospitals, industries, securities and many other important fields. This shift work causes several problems in individuals like gastrointestinal disturbances, sleep disorders, desynchronization of oral temperature circadian rhythm, anxiety, repressive emotional style, negative mood and low positive pressure.^{1,5} Also the shift work, more especially during the night and early morning, strongly influences the psychology and psychophysiology of human subjects. All of these lead to increased stress in life of individuals.⁵⁻⁷ The present study shown that, the incidence of the periodontal diseases was high among the shift or night duty individuals and the difference between scores of the control group and the study group were statistically significant. (Students t test, $p < 0.001$) This indicates that the changing the life events of the individuals influences the development of periodontal disease to some extent. One of the important factors essential in the etiology and maintenance of inflammatory diseases including periodontal diseases is stress.⁴ It influences the host defence mechanism, by exerting an immunosuppressive effect and also by increasing one's vulnerability to disease. Various mediators of inflammation like cytokines are activators of the central stress responses; and the glucocorticoids released through this mechanism regulates the recruitment of the immune cells into the inflamed tissue to decrease the psychological stress.^{8,9}

Conclusion: This study added a focus on the relationship between shift or night duty individuals and the incidence of periodontal disease. Thus the educational knowledge programs of the maintenance of the oral and

general health should be started at various levels to improve the life style of these individuals.

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