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RELATIONSHIP BETWEEN EMPLOYEE'S STRESS LEVELS AND SUBJECTIVE ORAL HEALTH CONDITIONS AND BEHAVIOUR

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ABSTRACT

The study was performed to identify the relationship between employees' stress and subjective oral health conditions and behaviour. The survey was done from April 20th to 25th, 2018 and targeted on people who are week days part timers and workers using a document preparation service, 'Naver form'. The collected data was analysed by using SPSS ver. 24.0 and a one-way ANOVA. As a result, The highest average stress level was 20.74 for the 'service workers' and the lowest with 18.60 was for 'other' occupations. There was no statistically significant difference by occupations. The average stress level of those who answered 'Very good' of their subjective oral health condition was the lowest with 17.00, and the highest level was 21.48 for those who answered 'Poor'. There was no statistical significance between the average stress level and their subjective oral health condition. The average stress level according to oral health care behaviour, such as scaling and smoking, showed no statistically significant difference. And to conclude, the better the oral condition, the lower the stress level. The more stressed, the lower the oral health behaviour and the poorer the subjective oral health status.

KEYWORDS: Occupation-related stress, Subjective oral health condition, Oral health care.

INTRODUCTION

In modern society, stress is an important factor related to our health, and it appears in complex and various forms.[1] Stress is a part of our life and somehow it affects positively survival and wellbeing, but when it is difficult to handle or stressful condition is prolonged, it becomes inadequate and threatens individual wellbeing and causes illness. In these days, we spend a lot of our time at work and job-related stress has influenced on our lives. It has been reported that inappropriate stimuli affect the mental and physical health of individuals and furthermore, it is an important factor directly or indirectly in oral health.[2,3]

Several studies have reported that stress is one of the factors affecting oral health behaviours such as non-smoking and oral hygiene care[4], and related to recurrent aphthous ulcers, oral lichen planus, dry mouth and temporomandibular joint disorder, oral soft tissue disease.[5] In addition to these facts, it has been also reported that various oral symptoms, such as tooth decay and gum disease, appear due to neglect of oral care when stressed.[6] Various clinical symptoms caused by stress can affect negatively our daily life, physically, mentally and socially.[7] As such, undesirable health behaviour and habits caused by stress can lead to poor health and diseases, ultimately lowering quality of life.

Therefore, this paper attempted to analyse factors affecting subjective oral health condition by evaluating occupational stress, oral health behaviour and subjective oral health condition for workers who have high job-related stress among various stresses that can be experienced.

Table 1. General characteristics of survey respondents.   (N = 213)

Characteristics	Variable	Frequency	Percentage (%)
Gender	Male	116	54.5
	Female	97	45.5
Age (years)	20-29	161	75.6
	30-39	23	10.8
	40-49	25	11.7
	50-59	3	1.4
	60-69	1	0.5
Occupation	Manufactoring	14	6.6
	Office	72	33.9
	Health Care	27	12.5
	Service	44	20.5
	Sales	6	2.8
	Other	50	23.7

METHOD
Target and Period
The survey was conducted from April 20th to 25th, 2018 using a document preparation service, 'Naver Form (Mobile)', targeting on weekday part timers and workers. A total of 213 responses, excluding unreliable responses, were analysed.

Statistical Analysis
The collected data was analysed by using a statistical software, SPSS 24.0. Frequency and percentages were calculated to determine the general characteristics and occupational categories of the respondents. A one-way ANOVA was performed to figure out stress levels of the respondents depending on occupational categorises and subjective oral health condition, oral health condition, smoking and scaling. All statistical significance levels were defined as 0.05.

RESULTS
General Information of Subjects

Table 2. Average stress levels by occupations   (N = 213)

Occupations	Frequency	Percentage (%)	Average Stress Level	p*
Manufacturing	14	6.6	18.64 ± 6.416	
Office	72	33.9	20.70 ± 3.751	
Health Care	27	12.5	19.77 ± 2.535	0.19
Service	44	20.5	20.74 ± 4.007	
Sales	6	2.8	19.80 ± 2.950	
Other	50	23.7	18.60 ± 6.115	

Table 1 shows general information of subjects for the study such as gender, ages and occupations. A total of 213 were included, of whom 54.4% were male (116) and 45.5% were female (97). By age, 75.6% were in their 20s (161), followed by 10.8% were in their 30s (23), 11.7% were in their 40s (25), 1.4% were in their 50s (3) and 0.5% were in their 60s (1). Among the occupational categorises, 6.6% were manufacturing workers (14),

33.9% were office workers (72), 12.5% were medical workers (27), 20.5% were service workers (44), 2.8% were sales workers (6) and 23.7% were others (50).

Stress Level by Occupation

Table 3. Average stress levels by subjective oral health condition (N = 213)

Category	Status	Frequency	Percentage (%)	Average Stress Level	p*
Subjective Oral Health Condition	Very good	19	4.9	17.00 ± 5.657	
	Good	52	24.9	19.27 ± 2.965	
	Fair	82	38.4	19.78 ± 4.987	0.19
	Poor	57	26.5	21.48 ± 4.862	
	Very poor	11	5.3	19.00 ± 3.950	
	Total	213	100.0	19.95 ± 4.597	

The average stress level by occupations is shown in Table 2, which presents 18.64 for manufacturing workers (14), 20.70 for office workers (72), 19.77 for health care workers (27), 20.74 for service field (44), 19.80 for sales filed (6) and 18.60 for other professions (50). The highest level was 20.74 for the service workers and the lowest with 18.60 was for other occupations.

Stress Level by Subjective Oral Health Condition
Table 3 presents the average stress level by subjective oral health condition. The average stress level for each response of their subjective oral health condition was as follows; 17.00 for 'Very good' (4.9%), and 19.27 for 'Good' (24.9%), 19.78 for 'Fair' (38.4%), 21.48 for 'Poor' (26.5%) and 19.00 for 'Very poor' (5.2%). The average stress level of those who responded to 'Very good' of their subjective oral health condition was the lowest with 17.00, and the highest level was 21.48 for those who responded to 'Poor'.

Table 4. Average stress levels by oral health care (N = 213)

Category	Status	Frequency	Percentage (%)	Average Stress Level	p*
Scaling	Yes	135	63.4	20.20 ± 2.237	
	No	60	28.4	19.80 ± 1.355	0.06
	Don't know	18	8.2	18.35 ± 2.452	
Smoking	Current smoker	41	19.4	19.90 ± 3.823	
	Ex-smoker	66	30.8	19.78 ± 2.461	0.42
	Never-smoker	106	49.8	20.07 ± 6.273	

Stress Level by Oral Health Care
The relationship between the average stress level and oral health care was presented in Table 4. When asked about their experience with scaling, 63.4% answered 'Yes' and its average stress level was the highest with 20.20. The average stress level for those who answered 'No' (29.4%) was 19.80 and 8.2% answered 'Don't Know' whose average stress level was the lowest with 18.35. It differs from the expectation that the more stressed, the poorer oral health care would be. Regarding smoking experience, about half of them (49.8%) were 'Never-smoker', whose average stress level was the highest with 20.07. 18.5% of respondents were 'Current smoker' and their average stress level was 19.90 and 30.8% were 'Ex-smoker' with the average stress level of 19.78. This also differs from the expectation that the higher the average stress level, the more likely the smoking experience would be.

DISCUSSION
Employees' stress has been seriously treated as 'Industrial accident' and undesirable health behaviour or habits caused by stress can eventually lead to poor health condition and even diseases. At worst, poor oral health

conditions can be detrimental to quality of our life so that it is necessary to study about the effects of stress on oral health awareness, oral health behaviour and oral related quality of life.

As such, this study was performed to analyse the effect of stress on subjective oral health condition by evaluating employee's stress, subjective oral health condition and oral health behaviour.

The average stress levels by occupational groups were 20.74 for service workers (44), 20.70 for office workers (72), 19.80 for sales workers (6), 19.77 for health care workers (27), 18.64 for manufacturing workers (14) and 18.60 for other professions (50). The highest level was 20.74 for the service workers and the lowest with 18.60 was for other occupations. The result shows that, as expected, the stress level was high among service workers, however, the average stress levels calculated for each occupational group were nearly the same, with no statistically significant differences. Moreover, in part, it shows different result from Kim's research which compared the stress levels of the three job groups of the manufacturing, sales and office workers.[3] It suggested that the stress of the sales workers was significantly higher than that of the other two occupations, but in our result, the highest stress level among the three occupations was office workers.

The average stress level of those who responded to 'Very good' of their subjective oral health condition was the lowest with 17.00, and the highest level was 21.48 for those who responded to 'Poor'. This indicates that the better oral health, the lower the average stress level but there were no significant differences. Additionally, the average stress level for those who responded to the 'Very Poor' was 19.00 which was lower than the average stress level for those who responded to the 'Poor'. This is consistent with Jang's research suggesting that the higher the stress level, the poorer subjective oral health condition[8], and Kim's suggestion that the higher the job instability and workplace culture maladjustment, the poorer the oral health.[3]

To find out the relationship between stress and oral health care behaviour, we asked about scaling experience and smoking status. As a result, those who responded to 'Yes' regarding their scaling experience (63.3%) had the highest average stress level with 20.00 whilst the stress level of those who did not know about their scaling experience (8.2%) was the lowest with 18.35. Additionally, regarding smoking status, the average stress level of 'Never-smoker' (49.8%) was the highest with 20.07. These results on both two questions differed from the expectation that the more stressed, the poorer oral health care would be, and they would smoke.

CONCLUSION
To summary, this paper surveyed a total of 213 respondents, which included 14 manufacturing workers

(6.6%), 72 office workers (33.9%), 27 health care workers (12.5%), 44 service workers (20.5%), 6 sales workers (2.8%), and 50 others (23.7%), to figure out the relationship between employees' job-related stress and their oral health condition and behaviour. According to the occupational group, the average stress level of service workers was the highest with 20.74, and the lowest was 18.60 in the 'other' occupation, which was not statistically significant. According to the subjective oral health condition, the stress level of 'Very good' (4.9%) was the lowest with 17.00, and 'Poor' (26.5%) was the highest with 21.48, which was not statistically significant ($p < 0.05$). Stress levels related to oral health care behaviours, such as scaling and smoking, were not statistically significant ($p < 0.05$).

This is because there was a lack of more detailed job, and research subjects mainly composed of their 20s as a researcher's peers, so information on different ages was relatively insufficient.

To obtain statistically significant results regarding, it is necessary to conduct a survey with various and detailed items for various populations. a

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