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Has The Lockdown Affected Our Oral Hygiene ? An E-Survey to Evaluate the Effects of Lockdown on the Oral Hygiene Habits of the Population.

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Abstract

Introduction: CoViD-19 is a global pandemic which originated in in Wuhan province of China in December 2019. This brought the world to a standstill in the name of “lockdown”, of course impacting every aspect of the human life. We as dental professionals conducted a survey to view its effects on the dental hygiene of the people.

Objective of The Study: This study aimed at evaluating the effects of lockdown on the dental hygiene along with its related awareness among the general population.

Method: Google forms were used for the survey purpose. It involved 500 participants, randomly selected. The questions dealt with the oral hygiene measures followed by the participants, lockdown induced changes if any, and level of understanding of the importance of dental hygiene. Their responses were monitored on the google forms records. The data was presented in terms of pie-charts and bar graphs.

Results: The results revealed that 75.5% of the participants had changed their oral hygiene in the lockdown in positive way and 24.5% did not report any changes. Stress was found out to be a major cause for the negative changes.

Conclusion: The population appeared to be aware of the ways in which their oral hygiene had changed during the lockdown leading to a rather pronounced periodontal destructive condition; however, they seemed to be curious about acquiring more knowledge about more effective oral hygiene measures.

Keywords: COVID-19, Dental hygiene, Oral hygiene, Dental hygiene practices.

Introduction

CoViD-19 is currently the talk of the world. It was first identified in December 2019, in Wuhan province, Hubei region, of China, and today the virus has not left any stone unturned by affecting all the countries of the world. CoV-19/SARS-CoV-2 is a highly pathogenic virus that manifests itself with symptoms like fever, cough, fatigue, shortness of breath, loss of taste or smell, and at times the individual is absolutely asymptomatic [1][2]. The incubation period may range from 2-14 days. It resolves in most patients by merely symptomatic treatment and supportive care; however, part of the affected population develop complications like pneumonia, viral sepsis, ARDS, kidney failure, cytokine storm, cardiac issues with 3.2 % death rate. CoViD-19 infection could be prevented by frequent hand washing, wearing mouth masks, avoiding touching the eyes, nose and mouth with unclean hands, and social distancing [3]. The need for social distancing has brought the world to a standstill in the name of “lockdown”, of course impacting every aspect of the human life. The aftermath is both positive and negative terms. In several countries there has been a marked reduction of spread of influenza, STDs, including HIV, which can be attributed to COVID-19 quarantines and social distancing measures. However, this situation of panic has also resulted in several negative effects like mental health disorders [4], financial catastrophe, domestic violence, general health problems etc. Along with all these comes tagged the consequences on dental health and hygiene of the people. It is of high importance that people should be aware of these impacts on their oral health, and rather important is, if or not people are willing to change their oral hygiene habits for the good. This was an e-survey conducted by the dental students and professors to gauge the effects of CoViD-19 induced lockdown on dental health and the oral hygiene practices among the people.

Materials and Methods

A close ended questionnaire was prepared using google forms, which was circulated extensively among the general population, and the responses were recorded in the form of charts. A sample size of 500 respondents was considered for the cross-sectional survey. The questionnaire mainly consisted of questions pertaining to oral hygiene changes brought about in the participant’s life due to the CoViD-19 imposed lockdown. The questionnaires also assessed the level of understanding of the general population regarding their overall and dental health and the effect of overall health on the dental health.

Results

The results were analyzed and summarized using charts. The results computed were classified on the basis of the questions asked in the questionnaire. Results revealed that, majority (72.7%) of the respondents belonged to the age group 25 to 46 years. The participants were asked questions pertaining to their oral hygiene habits and their understanding about the importance of a dental visit. Out of the general population, 75.5% responded that they had changed their oral hygiene measures in a good way during

the lockdown; whereas, remaining 24.5% did not report any changes in the oral hygiene measures. 44.7% respondents said that they brush once daily, 37.8% respondents brush twice daily, 17.3% respondents brush thrice daily, also a small fraction (0.2%) respondents did not feel the need to brush daily [Fig No.: 01]. When asked about tongue cleaning habits, 79.2% of the participants acknowledged the use of various tongue cleaning aids, like, metal tongue scrapper, plastic tongue cleaner or the back of the toothbrush head; whereas, 20.8% denied cleaning the tongue on a regular basis [Fig No.: 02]. The use of adjunctive measures, mouthwash or floss or both, for maintaining oral hygiene was common in 75.9% of the participants; whilst, 24.1% of the participants did not think it was necessary to use adjunctive measures [Fig No.: 02]. The necessity to visit a dentist on a regular basis (every 6-12 months) was felt by 46.1%, while the other 53.9% visited the dentist only if there was a need. The data also revealed that a whopping 45.3% were aware about the changes in the oral cavity related to the stress. The majority (54.7%) of the participants were inquisitive about gaining more knowledge about ways of improving oral hygiene, by means of educational videos, articles, voice or video calls.

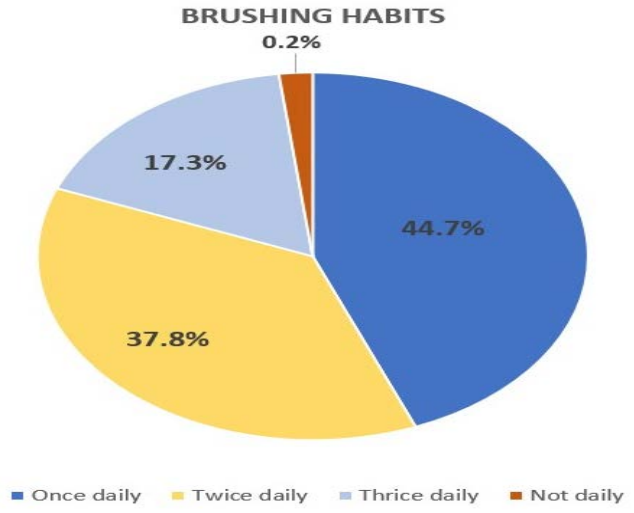

Fig. 1: Pie chart depicting brushing habits

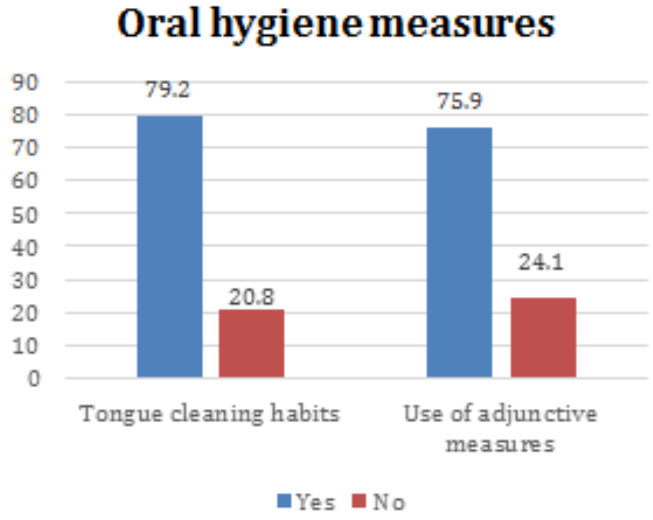

Fig. 2: Bar graph depicting use of oral hygiene measures.

Discussion

"Your mouth is the entry point of many bacteria," said Dr. Steven Grater, Pennsylvania Dental Association (PDA) member and general dentist from Harrisburg. "To keep these bacteria from going into your body, cleaning your mouth (brushing, flossing and rinsing) is necessary". 75.5 % of respondents have said that they have improved their oral hygiene in a good way, hence, paving their own way for good overall health. Diabetics are more prone to several oral health conditions, including tooth decay, periodontal (gum) disease, dry mouth and infections [5]. Studies also have shown that periodontal disease may be linked to cardiovascular disease, stroke, bacterial pneumonia, preterm births and low-birth weight babies [6][7][8]. 44.7% respondents brush once daily, 37.8% respondents brush twice daily, 17.3% respondents brush thrice daily. Though brushing thrice daily is known to reduce the risk of cardiac problems; however, American Dental Association recommends brushing twice daily for optimal results. Tongue cleaning reduced the amount of bacteria in tongue coating. Thus, it is recommended that tongue cleaning and tooth brushing should both be performed for promoting oral health [9]. And even though twice-daily tooth brushing is essential for good oral

hygiene, brushing alone may not protect you from gum disease and the tooth loss that can result. Flossing daily (combined with brushing and a rinse) helps protect against gingivitis by removing plaque and food particles, keeping your teeth and gums healthy [10]. Oral hygiene comprising toothbrushing and rinsing with a mouthwash containing 0.075% cetylpyridinium chloride demonstrated greater reductions of dental plaque bacteria, improving gingival health, and eliminating supragingival plaque than tooth brushing alone. [11]

Recent studies indicate that psychosocial stress represents a risk indicator for periodontal disease and should be addressed before and during treatment. Holmes (1967) developed a scale to measure stress in terms of life changes. In this scale, the life events are ranked in order, from the most stressful (death of a spouse) to the least stressful (minor violations of the law). In blood samples collected immediately before and after an emotional stress situation,the circulating concentration of T-helper lymphocytes (Cluster of Differentiation + T-cells), cytotoxic T-cells (CD8+), and natural killer cells (NK cells), is dramatically increased, but 1 h later, it is lowered to the baseline values. Furthermore, the plasma levels of Immunoglobulin (Ig) IgM, IgG, and complement component C3 are elevated after an acute stress situation. [12] It has been reported that psychological disturbances can lead patients to neglect oral hygiene and that the resultant accumulation of plaque is detrimental to the periodontal tissue. Emotional conditions are thought to modify dietary intake, thus indirectly affecting periodontal status. [14] This can involve, for instance, the consumption of excessive quantities of refined carbohydrates and softer diets requiring less vigorous mastication and therefore predisposing to plaque accumulation at the approximal risk site. [15] Genco RJ hypothesized that stress leads to other behavioural changes such as overeating, especially a high-fat diet, which then can lead to immunosuppression through increased cortisol production. [16] Stress also persuades many to the habit of smoking tobacco which contains nicotine that results in (i) vasoconstriction, produced by the release of adrenaline and noradrenaline, which is supposed to result in a lack of nutrients for the periodontal tissue; (ii) suppression of *in vitro* secondary antibody responses and (iii) inhibition of oral neutrophil function. [14]

Stress furthermore leads to decreased salivary flow, biting of tongue, lip, cheek or fingernail. These actions also figure in bruxing, clenching, tooth doodling, and smoking. Such habits may lead to tooth migration, occlusal traumatism, and occlusal wear. stress and its biochemical mediators may modify the immune response to microbial challenge, which is an important defence against inflammatory periodontal disease. Under stress, the release of adrenaline and noradrenaline may not only induce a decrease in blood flow, but possibly also in those blood elements necessary for maintaining resistance to disease-related microbes. [14] Besides all these, stress has also found to be associated with gingival diseases like acute necrotising ulcerative gingivitis, aggressive periodontitis [17], systemic inflammatory disease [18][19][20], and delayed wound healing. [21]

Conclusion

The CoViD-19 pandemic has created a situation of panic and crisis among the people of almost all the countries. The panic among people and the lockdown due to the pandemic has increased the extent of stress in every individual's life. Direct association between periodontal disease and stress remains to be proven, which is partly due to lack of an adequate animal models and difficulty to quantifying the amount and duration of stress. However, these studies indicate that psychosocial stress represents a risk indicator for periodontal disease. By the means of this

survey, it can be said that during the CoViD-19 imposed lockdown, the general population has improved their oral hygiene, attributed to the extra time in hand, more awareness and precautions. However, a majority of the population would want to learn more effective ways of improving oral hygiene, and be able to take care of their oral cavity more efficiently. Furthermore, extensive research is advocated to be able to better understand the effects CoViD-19 imposed lockdown.

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