The Effect of Quarantine During the COVID-19 Pandemic on The Oral Health Habits of the Syrian Community

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Abstract

Introduction: Corona Virus appeared at the end of 2019. It belongs to a large family of viruses that can cause respiratory infections. Due to its ability to spread rapidly and easily, it has become a pandemic throughout almost the entire world. This has necessitated the establishment of quarantine procedures in order to reduce the rate of spread of the virus and thus the number of deaths. However, these procedures may cause a range of effects on people. One of the most important aspects that can be affected is oral health care. This study was conducted to investigate the effect of quarantine procedures on the oral health habits of the Syrian community.

Materials and methods:

A survey was created using Google Forms and published on Facebook from 16 April 2020 until 11 May 2020. The number of people corresponding to the study criteria in Syria reached 1033. The survey looked at the effect of quarantine procedures on changing oral health habits, including the number of times of brushing and the time of brushing.

Results: Quarantine led to a change in oral health habits in 57.4% of the sample. Females were significantly more affected by changing habits during quarantine ($P=0.020$). The number of brushing times was not clearly affected and it was twice daily (49.4% before quarantine, 42.1% during quarantine). There was no statistically significant difference between the two periods in terms of the number of times of brushing.

Conclusion: This study is the first study that showed the effect of home quarantine on the oral habits of members of the Syrian community. Home quarantine did not significantly affect the oral health habits of Syrians.

Introduction

Coronavirus belongs to a large family of viruses that can cause respiratory infections whose symptoms range between the common cold and more severe symptoms. Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) are among the diseases that cause viruses from the Corona family. The new generation of the virus appeared in 2019 in Wuhan, China, and was named (2SARS-CoV). It later became a pandemic that threatens the lives of many individuals[1].

The pandemic has had severe economic and health impacts worldwide, especially in low-income countries such as Syria. Syria was classified by the World Health Organization (WHO) as a high-risk area according to the global risk assessment. On 22 March 2020 the first case of Coronavirus disease 2019 (COVID-19) was reported in Syria, and cases started to rise significantly after 26 March 2020 [2].

The Government of Syria enforced a two-month lockdown affecting land borders and airports in March 2020. Only essential services such as grocery shops, pharmacies and bakeries remained open. A partial

curfew was imposed [3].

Quarantine aims to separate people who have been exposed to the pathogen from general society and to emphasize the adoption of health prevention methods. Adherence to quarantine can cause some individuals to experience psychological, emotional and financial problems[4]. After the quarantine experiment conducted in 2003 in Canada when the SARS-CoV virus spread, there were significant negative effects on quarantined individuals who felt anxious, isolated, fearful, frustrated and depressed. Despite past quarantine experiences and the long history of quarantine, little is known about people's attitude and behavior during quarantine periods [5].

It may be very easy for an individual to ignore his normal healthy oral hygiene habits, and according to previous studies, people suffering from depression may have poor oral health care habits, therefore it is recommended that people diagnosed with depression receive more dental services [6]. All diagnosed mental illnesses were associated with increased tooth decay, as well as increased tooth loss[7].

The aim of the research:

This study aimed to understand the effect of quarantine on oral health habits.

Materials And Methods

Study design:

This observational cross-sectional online survey was conducted in Damascus between 16 April and May 15, 2021, in order to evaluate the oral health habits during the quarantine period.

The questionnaire was designed on the Google Form website while maintaining the confidentiality and anonymity of the person participating in the questionnaire and preventing the questionnaire from being answered by the same account.

The questionnaire consisted of several questions including gender, age, marital status, place of residence, educational qualification, economic status, and a question about oral health habits before and during the quarantine period. The aim of the questionnaire was to find out the effect of quarantine on people's oral health habits and link them to the other variables (educational qualification, economic status, gender and age).

On the first page of the questionnaire, after describing the aim and objectives of this research, the participants were asked for their informed consent to participate in this research. Participants under the age of 18 were asked to provide the informed consent of their parental or legal guardian.

Study population:

Participants were eligible if they were a Syrian citizen living in Damascus city. Damascus is the capital of Syria and the city with the highest population.

Statistical analysis

All data analysis was carried out using IBM SPSS Statistics for Windows (Version 26) (IBM Corp., Armonk, NY, USA). All tests were two-tailed and a p-value of less than 0.05 was considered statistically significant.

Results

The number of samples collected was (1090), and 57 (5.2%) of them were from outside Syria, so they were excluded from the sample, and thus the final sample number was (1033). The average age was (23.40 years) and ranged between 12-62 - with a mean of 5.43. The number of males was 265 (25.7%), while the number of females was 768 (74.3%). **(Table 1)** The socio-economic level of the sample was assessed through the (SES) indicator, where 576 (55.8%) of the sample were at a low level, (24.5%) a medium level, and finally (19.7%) at a high level.

Quarantine led to a change in the health habits of more than (57.4%) of the sample whereas there was no change in the oral health habits of (42.6%) of the sample. **(Table 1)** The method of maintaining the cleanliness of the toothbrush was evaluated and the sample showed mixed results: the majority (40.5%) put the brush in a cup with the rest of the family, (28.2%) put the brush in their own cup, (26.1%) covered the brush with a special cover and (5.2%) put the brush to the side of the sink. **(Table 1)**

The number of brushing times before and during quarantine was evaluated. The results did not show significant differences between the two periods: the majority of the sample brushed their teeth twice daily in both periods (49.4% before quarantine and 42.1% during quarantine).

The number of brushing times between the two phases was ($P = 0.716$). In addition, the time of teeth brushing was evaluated during the two time periods. The results were similar and there was no fundamental difference between the two variables during the two time periods ($P = 0.276$) except with regard to brushing before leaving the house, where before the quarantine it was a percentage (15.8%) but was not present during the quarantine period due to lack of movement **(Table N.2)**.

When comparing research variables between male and female respondents, females showed a greater change in oral health habits due to quarantine (59.5% for females compared to 51.3% for males) and this difference was statistically significant as the value of the level of significance was ($P = 0.020$). In addition, a fundamental difference was found between males and females both in terms of the number of brushing times before and after the quarantine and regarding the time of teeth brushing before and after the quarantine. The value of the significance level for each of the two variables was ($P = 0.000$, $P = 0.008$), respectively. **(Table 3)**

Discussion

Oral health derives its importance from its impact on public health, in addition to its role in raising an individual's self-confidence and enhancing his ability to communicate with the surrounding community[8]. The association of oral health with unhealthy habits among community members led the World Health Organization since the beginning of the eighties to set many goals to be achieved by 2020 under the name of dental self-care. These include: reducing the prevalence of oral diseases, increasing individuals' awareness of the importance of dental self-care associated with tooth brushing more than once a day and reducing the consumption of sugars [9]. The decline in social and economic conditions due to the Syrian crisis has been harmful to physical and mental health [10].

During the COVID-19 epidemic, the health habits of many individuals have been affected [11].

Many risk factors for dental pain have been reported including low socioeconomic conditions, stressful conditions, careless use of teeth, and unfavorable behaviors related to oral health [12]. COVID-19 has had devastating effects on society. Most countries have implemented policy measures to reduce transmission of infection from one person to another, including isolation, closure and large-scale closure, to help control the infection [13].

However, after the emergence of the COVID-19 virus and the challenges that came with it, dentists faced the difficulty of securing personal protective equipment, the high risk of transmission within the dental clinic setting, and patients' fear of following periodic visits [14]. It was imperative to ensure that society knew about the ideal oral care procedures and the effect of home quarantine on those procedures [15].

This study showed that the number of brushing times among the participating Syrian individuals is in line with the recommendations of the World Health Organization [15] and the (FDI) [16] of twice daily, with a rate of (49.4% before quarantine and 42.1% during quarantine). The consistent oral health habits during the different periods within the study sample may be due to the fact that the Syrian society is a society in which the Islamic religion predominates. Islam contains many instructions related to personal hygiene for sick and healthy individuals, which helps to make these habits a daily routine for the majority of the population [17].

The rate was similar to what is common in Greece [18], Sweden, Denmark, and Germany [19]. It is more than the number of brushing times common among some medical students in India which was once a day [20], and less than the number of times common among school teachers in Saudi Arabia, most of whom brush their teeth three times a day [21].

While brushing the teeth upon waking was the most frequent time in the sample during both study periods, it is contrary to the Oral Health Foundation's instructions, which recommend that brushing the teeth be the last thing an individual does before bed, in addition to again during the day [22]. The method of maintaining the brush was wrong for a large number of individuals. Several studies have shown that covering the brush or placing it in contaminated media (with other brushes or the side of the sink) increases pollution and bacterial growth on the surface of the brush [23] [24].

Home quarantine resulted in changing health habits for 57.4% of individuals, and females were more susceptible to changing habits during quarantine than males. This may be attributed to females staying at home for longer periods than males during this period. Nevertheless, females were more interested in oral health measures, whether before [24] [25] or during quarantine.

Conclusion

This study was one of the first studies that showed the effect of home quarantine on the oral habits of members of the Syrian community. Home quarantine did not significantly affect the change in the oral health habits of Syrians.

Recommendations

1. Emphasize the importance of oral health measures for all individuals, especially those who have chronic diseases that affect oral health.
2. Adopt health awareness programs that include all spectrums of society, especially in schools, as most adults are well versed in oral health habits.
3. Encourage cooperation with international organizations and associations interested in public and oral health, in particular to develop clear plans and strategies for disseminating correct information about self-care oral care procedures.
4. Emphasize the role of the dentist as a trainer and observer of the application of these procedures by patients attending dental clinics and centers.
5. Conduct additional studies on the effect of home quarantine on the spread of caries and periodontal disease.

Declarations

Ethics approval and consent to participate

Ethical approvals were obtained from the ethics committee of Damascus university – Syria. Participants were informed about the study purpose on the first page of the questionnaire, and they were asked to give their full informed consent to participate before filling the questionnaire. For participants under the age of 18, informed consent was obtained from the parents or the legal guardian of the participant.

In addition to that, all methods were performed in accordance with the relevant guidelines and regulations ('Sex and Gender Equity in Research – SAGER – guidelines').

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

All authors have contributed equally to the conception and design of the work; and to the acquisition, analysis, and interpretation of data. All authors read and approved the final manuscript.

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Abbreviations

COVID-19: Coronavirus Disease 19

FDA: U.S. Food and Drug Administration

SARS-CoV-2: Severe Acute Respiratory Coronavirus 2

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Tables

Tables 1-3 can be found in the supplementary files section.

Supplementary Files

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