Knowledge and awareness about isolation and incubation of Covid 19 among dental students- A survey

Subaraman M¹, Keerthi Sasanka L*², Gayathri R³, Dhanraj Ganapathy²

¹Saveetha Dental College, Saveetha Institution of Medical and Technical Sciences, Saveetha University, Chennai – 600077, Tamil Nadu, India
²Department of Prosthodontics, Saveetha Dental College, Saveetha Institution of Medical and Technical Sciences, Saveetha University, Chennai – 600077, Tamil Nadu, India
³Department of Biochemistry, Saveetha Dental College, Saveetha Institution of Medical and Technical Sciences, Saveetha University, Chennai – 600077, Tamil Nadu, India

Article History:
Received on: 20 Jul 2020
Revised on: 15 Nov 2020
Accepted on: 31 Dec 2020

Keywords:
COVID 19,
ICTV,
SARS,
WHO

ABSTRACT

According to the World Health Organization (WHO), viral diseases continue to emerge and cause a serious issue to public health. In the last twenty years, several viral epidemics such as H1N1 influenza in 2009, the severe acute respiratory syndrome coronavirus (SARS-CoV) in 2002 to 2003, and, have been recorded. Most recently, the Middle East respiratory syndrome coronavirus (MERS-CoV) was first identified in Saudi Arabia in 2012 and now COVID19. Initially, the new one was called 2019-nCoV. Later, the group of experts of the International Committee on Taxonomy of Viruses (ICTV) termed it the SARS-CoV-2 virus as it is similar to the one that caused the SARS outbreak (SARS-CoVs). Coronavirus is one of the main pathogens that target the human respiratory system. Past outbreaks of coronaviruses (CoVs) comprises the Middle East respiratory syndrome (MERS)-CoV and severe acute respiratory syndrome (SARS)-CoV which have been reported as agents that are a great public health threat. A group of patients was admitted to hospitals with an initial diagnosis of pneumonia of an unknown aetiology, In late December 2019. A questionnaire was designed online in Google docs which consisted of 15 questions. The study population included was dental students. Later statistics were analysed and studied. The response collected and the data was analysed. The responses were half mixed about on the brain. But in total, the results are positive. This survey concluded that dental students are aware of the isolation and incubation of COVID19.

INTRODUCTION

The World Health Organization (WHO) states that viral diseases have emerged continuously and stands as the greatest public health issue. For the past two decades, there have been epidemics which include viral infections like H1N1 influenza (2009), the severe acute respiratory syndrome coronavirus (SARS-CoV) (2002) have been recorded and the most recent epidemic was the Middle East respiratory syndrome coronavirus (MERS-CoV) was first identified in Saudi Arabia in 2012 following the pandemic COVID19. At the initial diagnosis, the
novel coronavirus was called 2019-nCoV which was later renamed by a group of experts in International Committee on Taxonomy of Viruses (ICTV) as SARS-CoV-2 virus because it is similar to the virus that caused SARS (SARS-CoVs). One among the main pathogens that target the human respiratory system was Coronavirus. The past coronaviruses outbreaks comprise the Middle East respiratory syndrome (MERS)-CoV and severe acute respiratory syndrome (SARS)-CoV which have been a great public health threat (Rothan and Byrareddy, 2020). The first diagnosis of this kind of pneumonia was seen in a group of people with an unknown etiology (Bogoch et al., 2020; Lu, 2020). The reports revealed the onset of a Coronavirus outbreak has no estimate of a reproduction number in the 2019 and emerged as Novel Coronavirus (COVID-19, named by WHO on Feb 11, 2020) (Zhao et al., 2020), and it was presumed that most of the patients were infected in that hospital, likely due to nosocomial infection and it was concluded that the COVID-19 is doest spread very fast (spread by one patient too many others).

A total of 571 cases were reported in 2019 with the new coronavirus (COVID-19) in 25 provinces (districts and cities) within China, and by January 22, 2020, (Lu et al., 2020). This virus transmission from one human to another was first detected by the US health sector on January 30, 2020, with an estimated incubation period of about 5.2 days (Li et al., 2020). The onset of the symptoms ranged in most of the infected people from 6 to 41 days, with a median of 14 days. This is also dependent on the age and status of the patient’s Immune system. The onset of the symptoms was shorter among people who are > 70-years old when compared with under the age group below 70 years (Wang et al., 2020). The infection starts with more common symptoms like fever, cough and fatigue, and also include symptoms like sputum production, headache, haemoptysis, diarrhoea, dyspnoea, and lymphopenia (Ren et al., 2020). The important pathogenesis of COVID-19 infection was due to a virus which targets the respiratory system causing severe pneumonia, and also leads to cardiac disorders and dysfunction (Huang et al., 2020). There is importance in understanding the facts that there are similarities with the symptoms of the COVID-19 infection and the other betacoronavirus which develops with fever, dry cough, dyspnea, and bilateral ground-glass opacities on chest CT scans. The symptoms of COVID-19 are associated with an increasing number and rate of fatalities, specially in the immune-compromised people. The genetic analysis of the virus was done reporting that the genomic sequence of COVID-19 tested with the bat-derived severe acute respiratory syndrome (SARS) has a close 88% identical genomic sequences (Wan et al., 2020), and later confirmed that the Person-to-person transmission via direct contact or through droplets by coughing or sneezing from an infected person (Carlos et al., 2020). As the human transmission of COVID-19 is proved, the effective way to control the spread was done with the isolation of the patients with the infection and were treated with the available symptomatic treatments till date, as there are no specific medication or vaccines against the COVID-19 infections. The capability for these viruses to be a pandemic worldwide is considered as the highest health risk and the WHO stated that the COVID-19 a “very high” level pandemic infection. There have been several different types of research being done all over the world, previously our department has published extensive research on various aspects of prosthetic dentistry such as advances studies (Venugopal et al., 2014; Vijayalakshmi and Ganapathy, 2016), in-vitro studies Ashok et al. (2014); Duraisamy et al. (2019); Jyothi et al. (2017), analysis based study (Basha et al., 2018; Jain et al., 2017), study of effects of various products (Ajay et al., 2017; Ganapathy et al., 2016, 2017) review based studies (Ariga et al., 2018; Kannan and Venugopalan, 2018; Selvan and Ganapathy, 2016) survey researches (Ashok and Suvitha, 2016), this vast research experience has inspired us to research about Knowledge and awareness about isolation and incubation of COVID 19. The aim of the study is to study the Knowledge and awareness about isolation and incubation of COVID 19 (Subasree et al., 2016).

MATERIALS AND METHODS

A survey conducted with self.A prepared questionnaire comprising 15 questions. With a sample of 100 dental students. The questionnaire was prepared with questions composing isolation and incubation of COVID 19. These questions help to determine perception on COVID 19 and that help to depict their knowledge and awareness on this topic steps like selecting survey participants randomly, fixing restrictions over the particular population, elimination of irrelevant questions been asked to participants were taken a few measures to prevent sampling bias in the survey. The response recorded using the online platform “Google forms” was analysed using the statistical software SPSS version 2.0 chart analysis was carried out with the responses recorded in the software and the result was represented using the pie chart.
Figure 1: Depicts the knowledge among participants about the quarantine and its need 95.5% aware

Figure 2: Shows the awareness among participants about pandemic disease 74.8% aware, 25.2% unaware

Figure 3: Depicts the knowledge among participants about the rate of spread of disease 94.6% aware

Figure 4: Shows the awareness among participants about the transmission of the virus 96.4% aware

Figure 5: Depicts the knowledge among participants about the incubation period of the virus 82.9% aware, 17.1% unaware

Figure 6: Depicts the awareness among participants about the social distancing habit 96.4% aware

Figure 7: Depicts the frequency of hand wash 68.5% frequently wash hands and 31.5% does not wash hand frequently.

Figure 8: Shows the awareness among participants about the respiratory illness associated with COVID19 91.9% aware, 8.1% unaware.
Do you use PPE?

Figure 9: Shows the usage level of PPE. Out of 100 participants, 72.1% were aware, and 27.9% were unaware.

Are you aware of symptoms of COVID19?

Figure 10: Awareness on symptoms of COVID19. 92.8% aware, 7.2% unaware.

Are you aware that older people are more prone to the COVID19?

Figure 11: Depicts the awareness on age as a risk for COVID19. 95.5% aware.

Do you think self-quarantine is essential for us in controlling COVID19?

Figure 12: Depicts the self-quarantine need for controlling COVID19. 93.7% aware.

Are you aware of COVID19 incubation time?

Figure 13: Bar chart showing the correlation between gender and COVID19 incubation time awareness.

Are you aware that COVID19 is person to person transmission?

Figure 14: Bar chart showing the correlation between gender and COVID19 person to person transmission awareness.

Are you aware of the rate of spread of this infection?

Figure 15: Bar chart showing the correlation between gender and rate spread of this infection.
RESULTS AND DISCUSSION

Figure 1 shows the percentage of the knowledge among participants about the quarantine and its need 95.5% aware about what does a quarantine mean. Figure 2 shows the percentage of the awareness among participants about the pandemic disease, 74.8% aware about what does the pandemic disease, 25.2% unaware about the pandemic disease. Figure 3 shows the knowledge among participants about the rate of spread of disease, 94.6% aware about the infection spread. Figure 4 shows the awareness among participants about the transmission of the virus, 96.4% aware that transmission of the virus will be from human to human, Figure 5 shows the knowledge among participants about the incubation period of the virus, 82.9% aware about the incubation period of the virus, 17.1% unaware about the incubation period of the virus, Figure 6 shows the awareness among participants about the social distancing habit, 96.4% aware of the social distancing habit. Figure 7 shows the frequency of handwashing habit among the participants; 31.5% frequently wash their hands and 68.5% does not wash hand frequently. Figure 8 shows the awareness among participants about the respiratory illness associated with COVID19, 91.9% aware that the respiratory illness associated with COVID19, 8.1% unaware of the respiratory illness associated with COVID19. Figure 9 shows the usage level of PPE. Out of 100 participants, 72.1% were aware and used the PPE, and 27.9% were unaware of any PPE. Figure 10 shows on the awareness of the symptoms of COVID19, 92.8% aware about the symptoms of COVID19, 7.2% unaware about those symptoms. Figure 11 Depicts the awareness on age as a risk for COVID19, 95.5% are aware that older people are at more risk due to COVID19 infection. Figure 12 shows the awareness on self-quarantine as a need for controlling COVID19, 93.7% aware self-quarantine as a need for controlling COVID19. Figure 13 shows the correlation between gender and covid19 incubation time awareness. Out of 100 participants, 65 male participants were aware and 20 females were aware of the incubation time for COVID 19, the P-value was 0.00 (<0.05) and it was statistically significant that majority of the males are more aware about the Covid19 incubation time awareness. Figure 14 show the correlation between gender and covid19 person to person transmission awareness. Out of 100 participants, 65 male participants were aware and 20 females were aware of the incubation time for COVID 19, the P-value was 0.929 (>0.05) and it was statistically not significant. Figure 15 show the correlation between gender and rate spread of this infection. Out of 100 participants, 65 male participants were aware and 20 females were aware of the rate of spread of this infection, the P-value was 0.899 (>0.05) and it was statistically not significant. Figure 16 shows that the correlation between gender and awareness on covid19 pandemic. Out of 100 participants, 19 male participants and 08 female participants are aware that COVID 19 infections have been announced as a pandemic, the P-value was 0.382 (>0.05) and it was statistically not significant. Figure 17 show the correlation between gender and awareness of symptoms of covid19, the P-value was 0.655 (>0.05) and it was statistically not significant.

The responses are collected from the data and were analysed based on perception and awareness about COVID19 incubation and isolation period. The total respondents are 111. The responses were half mixed about the addiction. The responses are positive only. From results, when asked about, the awareness of COVID 19 100% responses were yes. It showed the participants’ concern about COVID19.
a similar response was seen in a previous study by Balkhy et al. in 2010 where the awareness of the swine influenza among the Saudi public was high (Balkhy et al., 2010). When the population is asked about, are they aware of the person to person transmission (Figure 4) 96.4% were aware? This result strengthens the previous study conducted about that topic (Saxena, 2020). Where the author explains the pathological nature of COVID19, when they are asked about do you use PPE (Figure 10). 27.9% were used PPE. This result was correlated with the previous study (Modi et al., 2020), where 45.4% were aware of the application of mask respirator. When they are questioned about the incubation time of COVID 19 (Figure 6). 82% of participants were aware. This population is also aware that older people are more prone to COVID 19 95.5% (Figure 13). This will correlate with the previous literature (Shah and Farrow, 2020).

CONCLUSIONS

Within the limits of the present study, awareness and knowledge among the participants about the COVID 19’s isolation and the incubation period was analysed and can be concluded that majority of the population possesses adequate level of awareness about the pandemic outbreak COVID 19’s, the need and importance of isolation and also about the incubation period of the coronavirus.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

Funding Support

The authors declare that they have no funding support for this study.

REFERENCES

Ajay, R., Suma, K., Ali, S., et al. 2017. Effect of surface modifications on the retention of cement-retained implant crowns under fatigue loads: An In vitro study. Journal of Pharmacy And Bioallied Sciences, 9(Suppl 1):154–160.

Ariga, P., Nallaswamy, D., Jain, A. R., Ganapathy, D. M. 2018. Determination of Correlation of Width of Maxillary Anterior Teeth using Extraoral and Intraoral Factors in Indian Population: A Systematic Review. World Journal of Dentistry, 9(1):68–75.

Ashok, V., Nallaswamy, D., Begum, S. B. 2014. Lip Bumper Prosthesis for an Acromegaly Patient: A Clinical Report. Journal of Indian Prosthodontic Society, 14(51):279–282.

Ashok, V., Suvitha, S. 2016. Awareness of all ceramic restoration in rural population. Research Journal of Pharmacy and Technology, 9(10):1691–1693.

Balkhy, H. H., Abolfotouh, M. A., Al-Hathlool, R. H., Al-Jumah, M. A. 2010. Awareness, attitudes, and practices related to the swine influenza pandemic among the Saudi public. BMC Infectious Diseases, 10(1):42.

Basha, F. Y. S., Ganapathy, D., Venugopal, S. 2018. Oral Hygiene Status among Pregnant Women. Research Journal of Pharmacy and Technology, 11(7):3099–3102.

Bogoch, I. I., Watts, A., Thomas-Bachli, A., Huber, C., Kraemer, M. U. G., Khan, K. 2020. Pneumonia of unknown aetiology in Wuhan, China: potential for international spread via commercial air travel. Journal of Travel Medicine, 27(2).

Carlos, W. G., Carlos, W. G., Cruz, C. S. D., et al. 2020. Novel Wuhan (2019-nCoV) Coronavirus. American Journal of Respiratory and Critical Care Medicine, pages 7–8.

Duraisamy, R., Krishnan, C. S., Ramasubramanian, H. 2019. Compatibility of Nonoriginal Abutments With Implants: Evaluation of Micro gap at the Implant-Abutment Interface, With Original and Nonoriginal Abutments. Implant dentistry, 28(3):289–295.

Ganapathy, D., Sathyamoorthy, A., Ranganathan, H. 2016. Effect of Resin Bonded Luting Agents Influencing Marginal Discrepancy in All-Ceramic Complete Veneer Crowns. Journal of clinical and diagnostic research: JCDR, 10(12):67–70.

Ganapathy, D. M., Kannan, A., Venugopal, S. 2017. Effect of Coated Surfaces influencing Screw Loosening in Implants: A Systematic Review and Meta-analysis. World Journal of Dentistry, 8(6):496–502.

Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Cheng, Z. 2020. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The lancet, 395(10223):497–506.

Jain, A., Ranganathan, H., Ganapathy, D. 2017. Cervical and incisal marginal discrepancy in ceramic laminate veneering materials: A SEM analysis. Contemporary Clinical Dentalistry, 8(2):272–278.

Jyothi, S., Robin, P. K., Ganapathy, D., Anandiselvaraj 2017. Periodontal Health Status of Three Different Groups Wearing Temporary Partial Denture. Research Journal of Pharmacy and Technology, 10(12):4339–4342.

Kannan, A., Venugopal, S. 2018. A systematic review on the effect of use of impregnated retraction cords on gingiva. Research Journal of Pharmacy and Technology, 11(5):2121–2126.
Li, Q., Guan, X., Wu, P. 2020. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia. *New England Journal of Medicine*, 382:1199–1207.

Lu, H. 2020. Drug treatment options for the 2019-new coronavirus (2019-nCoV). *Bioscience trends*, 14(1):69–71.

Lu, H., Stratton, C. W., Tang, Y. W. 2020. The outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. *Journal of medical virology*, 92(4):401–402.

Modi, P. D., Nair, G., Uppe, A., Modi, J., Tuppekar, B., Gharpure, A. S., Langade, D. 2020. COVID-19 Awareness Among Healthcare Students and Professionals in Mumbai Metropolitan Region: A Questionnaire-Based Survey. *Cureus*, 12(4):e7514.

Ren, L. L., Wang, Y. M., Wu, Z. Q. 2020. Identification of a novel coronavirus causing severe pneumonia in human. *Chinese Medical Journal*, 133(9):1015–1024.

Rothan, H. A., Byrareddy, S. N. 2020. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *Journal of Autoimmunity*, 109:102433.

Saxena, S. K. 2020. *Coronavirus Disease 2019 (COVID-19): Epidemiology, Pathogenesis, Diagnosis, and Therapeutics*.

Selvan, S. R., Ganapathy, D. 2016. Efficacy of fifth generation cephalosporins against methicillin-resistant Staphylococcus aureus-A review. *Research Journal of Pharmacy and Technology*, 9(10):1815–1818.

Shah, S. G. S., Farrow, A. 2020. A commentary on "World Health Organization declares global emergency: A review of the 2019 novel Coronavirus (COVID-19)". *International Journal of Surgery (London, England)*, 76:128–129.

Subasree, S., Murthykumar, K., Dhanraj 2016. Effect of Aloe Vera in Oral Health-A Review. *Research Journal of Pharmacy and Technology*, 9(5):609–612.

Venugopalan, S., Ariga, P., Aggarwal, P., Viswanath, A. 2014. Magnetically retained silicone facial prosthesis. *Nigerian Journal of Clinical Practice*, 17(2):260–264.

Vijayalakshmi, B., Ganapathy, D. 2016. Medical management of cellulitis. *Research Journal of Pharmacy and Technology*, 9(11):2067–2070.

Wan, Y., Shang, J., Graham, R., Baric, R. S., Li, F. 2020. Receptor Recognition by the Novel Coronavirus from Wuhan: an Analysis Based on Decade-Long Structural Studies of SARS Coronavirus. *Journal of Virology*, 94(7).

Wang, W., Tang, J., Wei, F. 2020. An updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China. *Journal of medical virology*, 92(4):441–447.

Zhao, S., Lin, Q., Ran, J., *et al.* 2020. Preliminary estimation of the basic reproduction number of novel coronavirus (2019-nCoV) in China, from 2019 to 2020: A data-driven analysis in the early phase of the outbreak. *International Journal of Infectious Diseases*, 92:214–217.