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KNOWLEDGE, ATTITUDE AND PERCEPTION OF DENTAL AUXILIARY STAFF ABOUT COVID-19 PANDEMIC: A QUESTIONNAIRE SURVEY.

Dentistry

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ABSTRACT

Introduction: The risk of cross infection in dental clinical setup is high owing to the ample production of droplets and aerosols. This generates a need for uncompromising infection control in which dental auxiliary and cleaning staff plays a vital role. So an insight of their understanding on the measures to be taken to halt the spread of COVID-19 is salient. The aim of this survey is to evaluate the knowledge, awareness and practices regarding COVID-19 control as well as perception about working in the high risk environment among Dental auxiliary and cleaning staff.

Methods: A 21 items questionnaire was structured and distributed among 81 dental auxiliary staff presently working at PMNM Dental College and Hospital. The distribution of responses was presented as frequencies and percentages.

Result: Total knowledge score of 5.1 was seen. 54% of participants approached the working area wearing face mask only. About 48% of participants washed their hands less than 5 times a day. 60% of participants disinfected the surface before and after each treatment. 48% participants fumigated the area after each treatment. 48% of participants have vaccinated themselves and their families. 50% of participants reported to be fearful about working during this time.

Conclusion: A low level awareness score was reflected on the practices adopted during clinical hours. The present study showed the need for regular awareness program and highlights that psychological counselling and motivation is the need of the hour.

KEYWORDS

INTRODUCTION:

In December 2019, adults in Wuhan, started presenting to local hospitals with severe pneumonia of unknown cause. On December 31st 2019, China notified the outbreak of a novel coronavirus, the severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) to the World Health Organization.[1] Since its inception, the number of cases started increasing exponentially. It spread at an alarming rate, rapidly spreading from its origin to worldwide to become a global pandemic and caused severe morbidity and mortality worldwide.[2] The virus is known to exploit angiotensin-converting enzyme 2 receptor (ACE2), for attachment and internalisation in the host cells. The ACE 2 receptors are found in abundance on the membrane of the alveolar cells in the lower respiratory tract.[3]

Coronaviruses are enveloped positive sense RNA viruses ranging from 60 nm to 140 nm in diameter belonging to the β-Coronavirus genus. All RNA viruses mutate over time, some more than others.[4] Since the beginning of pandemic, SARS-CoV-2 coronavirus has mutated, resulting in different variants of virus. In December 2020, a new variant was reported, and since then, other variants have been identified and are under investigation. The Centers for disease control and prevention (CDC) has divided the SARS-CoV-2 variants into three classes: variant of interest, variant of concern, and variant of high consequence.[5] The B.1.617 variant also known as Delta variant was reclassified from a variant of interest to a variant of concern based to the assessment of transmissibility being atleast 50% more transmissible than the original strain. The variant is thought to be partly responsible for India's deadly 'second wave'[6,7] Yet another COVID variant of concern , Omicron, followed. It has been called a variant of interest by WHO based on the evidence that it has several mutations that may have an impact on how it behaves.

Health workers are at the front line of any outbreak response and as such are exposed to hazards that put them at risk of infection with the outbreak pathogen (in this case COVID-19). Hazards include pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence.[8]

Owing to the nature of the dental procedures and treatments, dental office seems to be at high risk for this nosocomial infection and presented a riskier environment for spreading the virus because of the nature of the dental treatment.[9] As the new coronavirus began sweeping across the globe, sanitation demands in the dental set up skyrocketed and continues to be so, due to the emerging variants which not only results in increased transmissibility, morbidity and mortality but also might have the ability to evade detection by diagnostic tests.[10] In fact, dental auxiliary and cleaning staffs along with the healthcare providers are on the front lines of the outbreak[7] as they work directly with the pathogen putting them at a greater risk. The main route of infection transmission in the clinical set up is through large droplets and aerosols generated during dental procedures.[11] These infected droplets can spread 1–2 m and deposit on surfaces. The virus can remain viable on surfaces for days in favourable atmospheric conditions but are destroyed in less than a minute by common disinfectants like sodium hypochlorite, hydrogen peroxide etc.[12] This makes dental auxiliary and cleaning staff utmost significant in controlling the spread COVID-19 infection as they are the people who are most responsible for maintenance of hygiene in the clinical set up. So assessing the awareness and measures taken by them becomes extremely important.

Well-designed questionnaires are a useful method to collect data easily from participants in studies . Hence this Questionnaire study is designed to investigate dental non-teaching staff's knowledge, attitudes, and perceptions regarding viral infection control in the dental environment.

METHODOLOGY:

A self designed questionnaire in local language was developed containing 21 questions. The questionnaire was structured into four domains. The first domain consisted of 9 questions pertaining to the knowledge about signs and symptoms of the COVID-19 disease as well as awareness of the measures which has to be undertaken to prevent the spread of the infection. The second domain consisted of 8 questions regarding practices adopted in the dental clinical area to prevent the transmission of the disease. The third domain on practices adopted at home to prevent the spread of infection to family members and the fourth domain was to assess perception and fears of the participants towards working during COVID 19 Pandemic in the high risk dental environment.

The survey was approved by the Institutional review board of PMNM Dental College and Hospital prior to conducting the study. All the 81 Dental auxiliary as well as cleaning staff presently working at PMNM Dental college and hospital were recruited in the survey. An examiner

was always present with the participants and they were encouraged to approach the examiner with any queries they might have.

RESULT

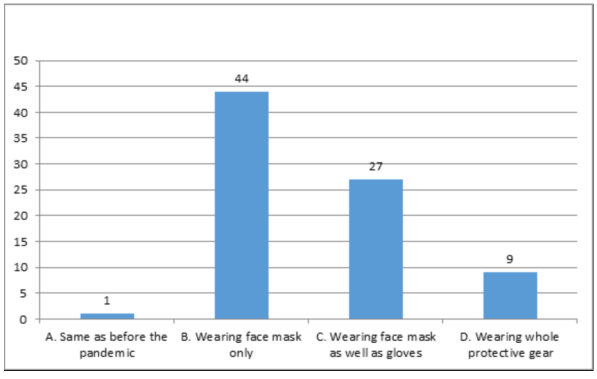
Knowledge And Awareness About COVID-19

A total awareness score was calculated based on the subject's responses. Each negative response was given a 0 score, and a positive response was given 1, total score of the participant was calculated by adding the sum of all responses, which ranged from 0 to 9. Based on the collective sum of scores, subjects are considered to have high level of knowledge if the percentage score will be (80%–100%; 7–9 score), moderate level (60%–79%; 5–7 scores), and (≤59%; 0–5 scores) as low leve.l.

Total knowledge score for all participants was 5. Their distribution and comparison is depicted in Table 1.

Practices Adopted In The Clinical Area:

About 54% of participants approached the clinical area wearing only face-mask.**(Graph 1)** About 48% of participants washed their hands less than 5 times a day. 60% of participants disinfected surface before and after each treatment. 48% participants fumigated the area after each treatment.



Graph 1: How Do You Approach The Clinical Area

Safety Measures Taken At Home:

54% participants washed their hands and took a bath immediately after entering the house. 54% of participants have vaccinated themselves and their families.

Perception And Fear Regarding Working During COVID-19 Pandemic.

About 50% of participants reported to be fearful about working during this time.65% of participants felt that COVID-positive patients should not be undertaken for dental treatment.

DISCUSSION

Dental clinical setup owing to the ample production of droplets and aerosols and dealing with oral cavity in such proximity presents a high risk setup for the spread of COVID-19.[13] There should be an uncompromising infection control regimen which must be followed and Dental auxiliary as well as cleaning staff lies at the centre of this. So an understanding about their grasp on the measures to be taken becomes salient.

In present study, majority of the participants (67%) had only partial knowledge about the mode of transmission of SARS-CoV virus. This information is crucial as not having a complete knowledge about the transmission of disease will hamper the precautions to be taken to limit the spread the disease. This is in contrast with the study conducted by **Alekhya K et al, 2020** among dental practitioners where majority of subjects (96%) had knowledge about mode of transmission.[13] The estimated incubation period of COVID-19 is up to 14 days. This shows that the educational background plays a significant role in understanding the infection quickly. Another reason might be the frequent exposure of dental practitioners to webinars and other awareness programs as opposed to scanty exposure of dental auxiliary and cleaning staff to such programs. In a study conducted on dental practitioners of Telangana state, it was seen that 95% of practitioners were aware to optimise and train their dental assisstants and staff to ensure the safety for themselves and patients and that it is required for the whole dental team to remain updated in their understanding of guidance of the prevention of disease transmission.[13]

Even though very less people were aware of its correct mode of transmission, 70% of participants showed correct knowledge about the best practices to be taken to restrain the spread of the virus from one individual to another. This can be attributed to the awareness generated by the social media, television, newspaper etc. Even though social media has played a pivotol role in creating the awareness regarding the COVID-19 pandemic, it is not always a reliable source. It can carry a lot of misinformation and brew internalized fear among public.

Contrary to the high level knowledge seen among participants on restraining the transmission from one individual to another, awareness among participants on how to halt the spread of disease in the dental clinical setup was low. The disease transmission is controllable if appropriate infection control and sanitisation protocol is followed in dental practice. CDC has given guidelines on the usage of appropriate personal protective equipment including the gloves, goggles and face shields, gown, masks or respirators and maintaining pre and post hand hygiene and sanitisation using disinfectant solutions and alcohol based rubs.[14]

Less than 50% of participants knew about the proper waste disposal in the appropriate colour coded dustbins. Awareness about the importance of surface dis-infection and fumigation after each treatment was found to be low (48%). The total awareness score of 5.1 which signifies a low level awareness was seen in the study. This is in accordance with study conducted by **Gupta et al**. who found 38.2% of knowledge among Indian dentist on Zika virus.[15] This shows deficiency in the knowledge among entire dental staff regarding the bio-aerosol transmitted diseases.

This low level awareness and knowledge is reflected on the practices adopted during clinical hours. From the start of the outbreak of COVID-19, the importance of hand hygiene has been emphasized time and again, this is even more important in the case of a dental setup. Studies have shown that proper hand hygiene, including hand washing with soap and water and cleaning using alcohol-based sanitizers, is an essential measure in controlling spread of respiratory illness including SARS. Therefore, WHO recommends frequent hand washing or using an alcohol-based hand sanitizer in the dental practice.

Only 11% of participants approached the working area wearing a protective gear while 54% used only mouthmask. 1% of participants even reported approaching the area the same way they used to before the pandemic**.** This highlights how important it is for the colleges to conduct regular awareness programs. Only after a complete and thorough knowledge about the disease and its mechanism of spread, necessary precautions can be taken to assure the safeguard of oneself and others.

We also included questions about measures taken by the participants to minimise the spread to the family members. All the participants reported washing hands and taking a bath immediately after entering the house. 37% even reported maintaining distance and staying in a separate room at home. This is a substantial finding of our study, nearly half the participants did not have detailed information about the disease and so the measurses and precautions taken by the participants was found to be not upto the mark.

Knowing the psychological impact this pandemic is having on people of every strata around the globe, items to analyse the perception of the participants on working in this high risk environment were also included. Majority of them (55%) showed a fearfulness and phobia towards working in the dental clinical setup. 48% even felt that the COVID positive patients should be denied treatment. This is in accordance with the study conducted by **Nashib Pandey et al** in which dental graduates and undergraduates showed fearfullness in carrying out any aerosol producing procedures.[17] It is the responsibilty of the primary oral care physician that various misconceptions about this disease are cleared from the minds of the people and inculcate positive attitude by educating and encouraging infection control measures.

To the best of our knowledge, our survey is the first to evaluate awareness, practices and psychology of dental auxiliary and cleaning staff.

CONCLUSION

The present study sheds light on the current level of awareness regarding COVID-19 including knowledge, preventive practices, and

perception of Dental auxiliary staff. The results of this survey suggested that the participants had a low level of knowledge regarding the mode of transmission and measures to be taken to restrain the infection. This low level of awareness was reflected on the preparedness and practices adopted during clinical hours. This showed the need for regular awareness programs that should be undertaken for the dental auxiliary and cleaning staff as they are at the heart of halting the spread of the infection in the dental clinical setup. It also highlights a need for psychological counselling and and encouragement is the need of hour for the mental well-being of our frontline warriors. There is a need for multicentre researches with large sample size for more robust insight about the knowledge, practices and perception of the Dental auxiliaries.

REFERENCES

1. Xinhua. China's CDC detects a large number of new coronaviruses in the South China seafood market in Wuhan. Available at: https:// www.xinhuanet.com/2020-01/27/c_1125504355.htm. Accessed 20 Feb 2020.
2. Zhu N, Zhang D, Wang W, et al. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med. 2020 Feb 20;382(8):727–733. https://doi.org/10.1056/NEJMoa2001017 PMCID:PMC7092803.
3. Cheng ZJ, Shan J. 2019 novel coronavirus: where we are and what we know. Infection. 2020:1–9. https://doi.org/10.1007/s15010-020- 01401-y.
4. Richman DD, Whitley RJ, Hayden FG. Clinical Virology, 4th ed. Washington: ASM Press; 2016
5. SARS-CoV-2 Variants of Concern. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/casesupdates/variantsurveillance/variant-info.html. Accessed May 3, 2021.
6. Coronavirus: 'Double mutant' Covid variant found in India. BBC News. https://www.bbc.com/news/world-asiaindia-56507988. Published March 25, 2021. Accessed June 10, 2021.
7. Lab Advisory: CDC classifies SARS-COV-2 variant B. 1.617.2 (Delta) a variant of concern.
8. World health organization.CORONAVIRUS DISEASE (COVID-19) OUTBREAK: RIGHTS, ROLES AND RESPONSIBILITIES OF HEALTH WORKERS, INCLUDING KEY CONSIDERATIONS FOR OCCUPATIONAL SAFETY AND HEALTH
9. Review of COVID-19 Variants and COVID-19 Vaccine Efficacy: What the Clinician Should Know? Deepa Vasireddya, f , Rachana Vanaparthyb, Gisha Mohanc , Srikrishna Varun Malayalad, Paavani Atlurie. J Clin Med Res. 2021;13(6):317-325
10. To KK, Tsang OT, Yip CC, et al. Consistent detection of 2019 novel coronavirus in saliva. Feb 12 12. pii: ciaa149 Clin Infect Dis. 2020. https://doi.org/10.1093/cid/ciaa149 PMCID:PMC7108139.
11. Meng, L., Hua, F. & Bian, Z. Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine. J. Dent. Res. 99, 481–487 (2020).
12. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. J Hosp Infect. 2020 Feb 6. pii: S0195–6701(20)30046–3.
13. Kanaparthi A, Dukkireddy D, Gopalaiah H, et al: Awareness of COVID 19 pandemic among dental practitioners of Telangana state, India: A cross-sectional survey. J Oral Biol Craniofac Rec 2020;10(4):484-9. https://doi.org/10.1016/j.jobcr.2020.08.001.
14. Centre for Disease Control and Prevention (CDC): Healthcare Personnel Preparedness Checklist for 2019-nCoV. Available online: https://www.cdc.gov/coronavirus/2019-ncov/downloads/hcp-preparednesschecklist.pdf (accessed on 4 June 2020)
15. Gupta N, Randhawa RK, Thakar S, et al: Knowledge regarding Zika virus infection among dental practitioners of Tricity area (Chandigarh, Panchkula and Mohali), India. Niger Postgrad Med J 2016;23(1):33–7.
16. World Health Organization (WHO): Coronavirus Disease (COVID-2019) Advice for the Public. Available online: https://www.who.int/emergencies/diseases/novel coronavirus-2019 (accessed on 22 July 2020).
17. Pandey N, Basnet B, Sushmit K, Khapung A, Gupta A. Awareness of aerosol-related transmission of COVID-19 among the dentists in Nepal. BDJ Open 2021;7:24.