

Analysis of Knowledge for Prevention of COVID-19 Infection Among Dental Practitioners

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ABSTRACT

Introduction: COVID-19 is basically a medium size RNA virus and the nucleic acid is about 30 kb long, positive in sense, single stranded and polyadenylated.

Objectives: The main objective of the study is to analyse the knowledge of guidelines for prevention of COVID-19 infection among dental practitioners and its plausible impact on future dentistry.

Material and methods: This descriptive cross-sectional study was conducted in Jinnah Hospital, Lahore during 2020. This study aimed to analyse the knowledge of guidelines for prevention of COVID-19 infection among dental practitioners. This study was done through systematically designed questionnaire. This survey analysis was conducted among dental students and professionals. The data was collected from 100 participants, who are willing to participate in this study.

Results: The data was collected from 120 participants. This data consist of both dental students and professionals. There are 68 (56.7%) female and 52 (43.3%)

male participants. Out of 120, 88 (73.3%) are dental professionals and 32 (26.7%) are dental students. According to respondents, there are different sources of information for COVID-19. Social media is the main source of information (46.7%), television (26.7%), others (15.8%) and print media (10.8%). There are different sources of transmission, aerosols and droplets, contact with human fluids and contact with contaminated surface.

Conclusion: It is concluded that COVID-19 directly effect on future of dentistry. Dental health care personnel need to understand the implications of potential transmission of the (SARS)-CoV-2 virus in a clinical setup.

Keywords: COVID-19; Dental health; Social media

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INTRODUCTION

The history of corona virus family is very old, it begins in 1965 when Tyrrell and Bynoe found that there was a virus family who damage the respiratory pathway. This virus was named as B814 in that time. It was transmitted from animals to humans. Now, in 2020 there is a virus COVID-19 which is also belongs to the family of corona virus is infected the whole world. People all around the world facing the situation of pandemic. This virus effected the whole world and do not believe in racism (He X, *et al.*, 2020).

COVID-19 is basically a medium size RNA virus and the nucleic acid is about 30 kb long, positive in sense, single stranded and polyadenylated. The RNA which is found in this virus is the largest known RNA and codes for a large polyprotein. In addition, coronaviruses are capable of genetic recombination if 2 viruses infect the same cell at the same time (Zhou F, *et al.*, 2020).

Several epidemics (such as H1N1, H5N1, avian influenza, Ebola, SARS, Zika, and Nipah) have affected India and other countries in the past, which were successfully tackled with appropriate research. The emergence of novel human pathogens and re-emergence of several diseases are of particular concern (Wölfel R, *et al.*, 2020). A novel human coronavirus initially referred to as the Wuhan coronavirus (CoV), currently designated as severe acute respiratory syndrome (SARS)-CoV-2, is responsible for the latest pandemic that is affecting human health and economy across the world. On 30 January 2020, the WHO declared the Chinese outbreak of COVID-19 to be a Public Health Emergency of International Concern because of its rampant spread, thus posing a high risk to countries with vulnerable health systems (Backer JA, *et al.*, 2020). According to the WHO situation report (14 May 2020) update

on COVID-19, there have been more than 42,48,389 reported cases and 2,94,046 deaths worldwide. By imposing a nationwide lockdown, India has curtailed the spread of this virus to a certain extent; however, the total number of reported cases has crossed 78000 with approximately 2500 deaths and these numbers continue to rise (Guan WJ, *et al.*, 2020).

DHCP (dentists, dental hygienists, dental assistants, and receptionists) need to update their knowledge and skills regarding infection control and follow the protocols recommended by the relevant authorities to protect themselves and their patients against infections. Several dental care facilities in affected countries have been completely closed or have been only providing minimal treatment for emergency cases (Wang D, *et al.*, 2020). However, several facilities in some affected countries are still providing regular dental treatment. This can in part be a result of the lack of universal protocol or guidelines regulating the dental care provision during such a pandemic (Lu CW, *et al.*, 2020). This lack of guidelines can on one hand increase the nosocomial COVID-19 spread through dental health care facilities, and on the other hand deprive patients' in need of the required urgent dental care. Moreover, ceasing dental care provision during such a period will incense the burden on hospitals emergency departments already struggle with the pandemic (Belser JA, *et al.*, 2013).

OBJECTIVES

The main objective of the study is to analyse the knowledge of guidelines for prevention of COVID-19 infection among dental practitioners and its plausible impact on future dentistry.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted in Jinnah Hospital, Lahore during 2020. This study aimed to analyse the

knowledge of guidelines for prevention of COVID-19 infection among dental practitioners. This study was done through systematically designed questionnaire. This survey analysis was conducted among dental students and professionals. The data was collected from 120 participants, who are willing to participate in this study. This questionnaire was based on 15 questions related to COVID-19 and treatment options.

STATISTICAL ANALYSIS

The data was collected and analysed using SPSS version 19.0 and Microsoft excel 2019. All the values were expressed in mean and standard deviation.

RESULTS

The data was collected from 120 participants. This data consist of both dental students and professionals. There are 68 (56.7%) female and 52 (43.3%) male participants. Out of 120, 88 (73.3%) are dental professionals and 32 (26.7%) are dental students.

According to respondents, there are different sources of information for COVID-19. Social media is the main source of information (46.7%), television (26.7%), others (15.8%) and print media (10.8%). There are different sources of transmission, aerosols and droplets, contact with human fluids and contact with contaminated surface. All of them is considered to be the major source of transmission.

According to dental health professionals teledentistry is the best possible option for patients. 77 (64.2%) participant's responses that conduct telephone triage to assess patient's need of emergency treatment is the best option. Only 10% dental professionals respond that to physically check all incoming patients.

Table 1 explains the responses of all 120 participants. According to participants latest pandemic effect directly on future dentistry and teledentistry is the best possible option (Table 1).

Table 1: Analysis of questionnaire for selected participants (n=120)

Variables	Frequency	%age
Gender		
Male	53	43.8
Female	68	56.2
Occupation		
Dental professional	88	72.7
Dental student	33	27.3
Source of information		
Television	32	26.4
Print media	13	10.7
Social media	56	46.3
Others	20	16.5
Major source of transmission		
Aerosols & Droplets	36	29.8
Direct/Indirect with Human Fluids	12	9.9
Contact with Contaminated surfaces	8	6.6
All of them	65	53.7
Treatment option		
Conduct Telephone Triage to assess Patient's need of Emergency treatment	77	63.6
Physically check all incoming Patients	13	10.7
Absolute shutdown of Dental practice	31	25.6

Protocol of waiting area		
Apply Social Distancing protocol in Waiting Area for patients	13	10.7
Pre-screening of Patients and provision of masks and disinfectants to patients	13	10.7
Schedule appointments apart enough to avoid Patient contact	12	9.9
All of above	83	68.6
Protocol of Emergency treatment		
Airborne Precautions and use of N95 masks for operating Dentist	53	43.8
Airborne Precautions and use of N95 masks for people entering that room	38	31.4
Defer the patient	30	24.8
Do you think people will be reluctant to seek Dental treatment in future		
Yes	48	39.7
No	73	60.3
Do you think that current pandemic will affect future Dentistry financially		
Yes	74	61.2
No	47	38.8
Do you think there is an urgent need to review dental curriculum and training programs		
Yes	98	81
No	23	19
Do you think that the latest pandemic will impact people's career option as a dentist		
Yes	75	62
No	46	38

DISCUSSION

Education-related challenges for medical and dental schools, as well as their affiliated hospitals, are significant (To KK, *et al.*, 2020). It was reported that open communication among students, clinical teachers, and administrative staff would enhance mutual trust and facilitate adequate cooperation (Cheng VC, *et al.*, 2020). Understanding the role of dental environments in COVID-19 transmission may have a positive impact in the prevention of infection. Workplaces as well as home environments must be considered at risk (Ong SW, *et al.*, 2020). In order to decrease the possibility of contagion, it will be necessary to keep sanitized the work environments and sterile the instruments, taking the right precautions in the management of patients and operators. Even paying attention to home devices for daily oral hygiene might have a positive impact on maintaining individual health and lower the chances of spreading the infection (Larson EL, *et al.*, 2000). Furthermore, it would be advisable to increase patient awareness, clarifying the spreading characteristics of the virus and how it can be possible to fight and stop the propagation of COVID-19 in a time when infection could be fatal (Schwartz KL, *et al.*, 2020; Li ZY and Meng LY, 2020; Marui VC, *et al.*, 2019; Patil NG and Yan YC, 2003; Rothe C, *et al.*, 2020).

CONCLUSION

It is concluded that COVID-19 directly effect on future of dentistry. Dental health care personnel need to understand the implications of potential transmission of the (SARS)-CoV-2 virus in a clinical setup. Hence, they need to keep themselves updated with any new information regarding this

disease. New approaches such as Teledentistry will help dentists assist patients without adding the risk of cross infection. It is hoped that the guidelines proposed in this work will help in the management of dental care around the world during this COVID-19 pandemic, and provide a solid base for further healthcare guidelines development.

REFERENCES

1. He X, Lau EH, Wu P, Deng X, Wang J, Hao X, *et al.* Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med.* 2020; 26(5): 672-675.
2. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, *et al.* Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet.* 2020; 395(10229): 1054-1062.
3. Wölfel R, Corman VM, Guggemos W, Seilmaier M, Zange S, Müller MA, *et al.* Virological assessment of hospitalized patients with COVID-2019. *Nature.* 2020; 581(7809): 465-469.
4. Backer JA, Klinkenberg D, Wallinga J. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travellers from Wuhan, China, 20–28 January 2020. *Eurosurveillance.* 2020; 25(5): 2000062.
5. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, *et al.* Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med.* 2020; 382(18): 1708-1720.
6. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, *et al.* Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China. *JAMA.* 2020; 323(11): 1061-1069.
7. Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. *Lancet.* 2020; 395(10224): e39.
8. Belser JA, Rota PA, Tumpey TM. Ocular tropism of respiratory viruses. *Microbiol Mol Biol Rev.* 2013; 77(1): 144-156.
9. To KK, Tsang OT, Yip CC, Chan KH, Wu TC, Chan JM, *et al.* Consistent detection of 2019 novel coronavirus in saliva. *Clin Infect Dis.* 2020; 71(15): 841-843.
10. Cheng VC, Wong SC, Chen JH, Yip CC, Chuang VW, Tsang OT, *et al.* Escalating infection control response to the rapidly evolving epidemiology of the coronavirus disease 2019 (COVID-19) due to SARS-CoV-2 in Hong Kong. *Infect Control Hosp Epidemiol.* 2020; 41(5): 493-498.
11. Ong SW, Tan YK, Chia PY, Lee TH, Ng OT, Wong MS, *et al.* Air, surface environmental, and personal protective equipment contamination by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from a symptomatic patient. *JAMA.* 2020; 323(16): 1610-1612.
12. Larson EL, Early E, Cloonan P, Sugrue S, Parides M. An organizational climate intervention associated with increased handwashing and decreased nosocomial infections. *Behav Med.* 2000; 26(1): 14-22.
13. Schwartz KL, Murti M, Finkelstein M, Leis JA, Fitzgerald-Husek A, Bourns L, *et al.* Lack of COVID-19 transmission on an international flight. *CMAJ.* 2020; 192(15): E410.
14. Li ZY, Meng LY. Prevention and control of novel coronavirus infection in department of stomatology. *Chin J Stomatol.* 2020; 55(4): 217-222.
15. Marui VC, Souto ML, Rovai ES, Romito GA, Chambrone L, Panuti CM. Efficacy of preprocedural mouthrinses in the reduction of microorganisms in aerosol: a systematic review. *J Am Dent Assoc.* 2019; 150(12): 1015-1026.
16. Patil NG, Yan YC. SARS and its effect on medical education in Hong Kong. *Med Educ.* 2003; 37(12): 1127.
17. Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, *et al.* Transmission of 2019-nCoV infection from an asymptomatic contact in Germany. *N Engl J Med.* 2020; 382(10): 970-971.