



**ORIGINAL RESEARCH PAPER**

**Dental Science**

**NOVEL CORONAVIRUS: AN UPDATED QUESTIONNAIRE SURVEY**

**KEY WORDS:** Covid 19, Dentistry, Prevention, Pandemic, Respiratory infection

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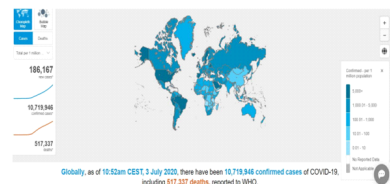
**ABSTRACT**

A severe respiratory illness was recently reported in Wuhan, Hubei province, China. Epidemiological investigations have suggested that the outbreak was related to a seafood market in Wuhan. Emerging infectious diseases, such as severe acute respiratory syndrome (SARS) and (MERS) presented a major threat to public health. Despite of intense efforts about how, when and where this disease appeared is still a source of considerable uncertainty. Little is known about the effectiveness of personal protective equipment for health care workers who take care of patients infected with the novel Coronavirus which has spread globally. Droplet transmission occurs when an individual is in close contact (within 1m) with someone who has respiratory symptoms (e.g., coughing or sneezing) and is therefore in danger of getting his/her mucosa (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Taking this into account, dentists are at highest risk for exposure to this virus since we work in close proximity to the patient's oral cavity. Thus the aim of our study is to assess the knowledge and awareness of 400 dental surgeons regarding COVID 19 in Kashmir region.

**INTRODUCTION**

Coronaviruses are distributed in mammals and are enveloped, nonsegmented positive sense RNA and belongs to sub family orthocoronavirinae, order Nidovirales<sup>1,2</sup>. They have been identified in mice, rats, chickens, turkeys, swine, dogs, cats, rabbits, horses, cattle and humans, and can cause a variety of severe diseases including gastroenteritis and respiratory tract diseases<sup>3</sup>. Three recently identified SARS-CoV causes a life-threatening pneumonia, and is the most pathogenic human coronavirus identified so far. SARS-CoV (COVID 19) is likely to reside in an animal reservoir, and has recently initiated the epidemic in humans through zoonotic transmission<sup>4</sup>. Symptomatic patients have been the main source of transmission whereas, asymptomatic patients and patients in the incubation period are as carriers. Clinically, affected individuals may be asymptomatic or suffering from severe pneumonia, acute respiratory distress syndrome, septic shock, and multi-organ failure, leading to death<sup>5</sup>. The virus is believed to spread via airborne transmission. In addition, studies have shown that respiratory viruses can also be transmitted directly or indirectly through saliva, as salivary glands are found to be the reservoirs<sup>6</sup> for some of its strains have been detected in saliva as long as 29 days after infection<sup>7</sup>. Hence, healthcare workers particularly the dental professionals are at more risk since the virus may be transmitted to operators from infected patients through aerosols<sup>8</sup>. Considering that numerous kinds of dental equipments that are used in the clinical practice in the form of handpieces, air-water syringes and ultrasonic scalers considerable amounts of aerosols are produced. Thus, the potential for the spread of infections from patients to dentists or dental assistants is high. Scully and Samaranayake emphasized on the fact that equal importance should be given to infection control in dental as with the understanding of oral manifestations and the diagnosis and management of viral infections<sup>9</sup>. Effective infection control measures for the prevention or minimization of viral infection transmission

should be implemented in clinical practice<sup>10</sup>. The National Health Commission of the People's Republic of China advocated that chlorhexidine, which is commonly used as mouthrinse in dental practice, may not be effective to kill corona virus<sup>11</sup>. COVID-19 has more respiratory symptoms than cold, which usually causes a runny nose, congestion, and sneezing. Other clinical symptoms of the affected individuals include fever, cough, chills, throat soreness, myalgia, arthralgia, vomiting, or diarrhea, reduced sense of smell and abnormal taste sensation has also been reported<sup>12,13</sup>. About 80% of people recover from the symptoms of COVID-19 without needing any special medical treatment. However, older adults and people with compromised immune systems such as diabetics, pre-existing heart diseases, asthmatic patients or cancer patients etc are at the highest risk of developing more severe disease. Real time reverse transcription polymerase chain reaction (RT PCR) is the most popular testing method for the detection of COVID-19. Antibody based immunoassay techniques combined with different signal detection methods are also found to be typically rapid detection methods<sup>14</sup>. Dental professionals are also at the high risk of nosocomial infections and can become the potential carrier of disease<sup>15</sup>. The dental team should be aware of the health protection against virus and should follow strict infection controls setup measures<sup>16</sup>. Due to its widespread transmission and reports of its spread to health care providers, it is more contagious than SARS and MERS. It is spreading globally in a faster pace.



**Figure 1:** <https://covid19.who.int/><sup>17</sup>

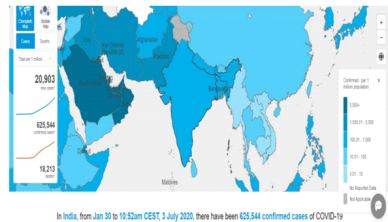


Figure 2: <https://covid19.who.int/17>

**MATERIAL AND METHODOLOGY:**

An electronic poll was conducted through online survey (arranged in <http://surveyheart.com/form-surveys>) making out of requests and assessed using rate with desire for evaluating the awareness among 400 dental surgeons of Kashmir about the updates of corona virus. A self-made questionnaire was sent to the said population through mail-id taken through individual to individual contact and individual phone numbers with yes, no and don't know as options (Likert scale). Study was set up in English to urge summit and to give indications of progress understanding of the requests by the respondents. Being an online survey no ethical underwriting was required for the examination. The study undertook in the month of June. Survey was pretested and affirmed among 10 subjects; these subjects were excluded from the study. Taking into account the response rate with margin of error at 5%, samples size was resolved to be around 385, however to expand the quality of the examination the sample size was expanded to 400. Sample size was determined using  $Z2pq/e2$ .

$Z=1.96$  for 95% of the confidence interval  
 $p$  = proportion of the population who had knowledge about coronavirus was 50% (0.5)  
 $q=1-p=0.5$   
 $e$  = margin of error was at 5% =0.05.

Required sample size was 384.16, hence taken to be 385(n)  
 The final data was gathered and dissemination of reactions was investigated utilizing frequencies and percentages.

**RESULTS**

The absolute populace of the study who participated was seen as 100%. Being dental specialist by profession, the respondents were knowledgeable with the survey and wordings utilized.

Around 96.25%, out of 100% were knowledgeable with the relationship of covid - 19 with that of dentistry. 99.95% of the population adhere to the severe convention of PPE use during the treatment of the patients with 98.75% concurred with washing of hands for atleast 20 seconds before and after PPE use. 96.25% agreed with the utilization of N-95 respirators in the centers and 97% had an idea of utilizing glass separators for the front office staff and the patients and specialists. 32.5% of the investigation subjects didn't agreed on the non or insignificant utilization of the aerosol dispersing units as 96% were knowledgeable with the aerosol preventing units.

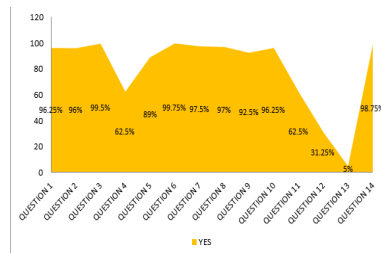
Just 31.25%, agreed with handling patients only after a covid test and 92.5% of them agreed to holding up of patients in their vehicles until the treatment of the patient to stay away from swarmed places. Albeit 50.5% of the dental specialists knew about no treatment accessible, and just 62.5% agreed of shutting their work on during the non accessibility of the masks.

**TABLE 1: REPRESENTING THE QUESTIONNAIRES RESULTS**

QUESTIONNAIRE	FREQUENCY/PERCENTAGE S (N/%)		
	YES	NO	DON'T KNOW

1. IS THERE ANY RELATIONSHIP BETWEEN COVID-19 AND DENTISTRY?	385 96.25	- 0	15 3.75
2. DO YOU KNOW ANYTHING THE AEROSOL PREVENTING UNITS AVAILABLE?	384 96	10 2.5	6 1.5
3. SHOULD PPE BE USED WHILE TREATING THE PATIENTS?	398 99.5	- 0	2 0.5
4. THE AEROSOL PRODUCING UNITS LIKE SCALERS AND HANDPIECES USED BE STOPPED OR USED MINIMALLY IN THE DENTAL PRACTICES?	250 62.5	130 32.5	20 5
5. WE ALREADY ADHERE TO STANDARD PRECATIONS. CAN A DENTIST DO ANYTHING TO PREVENT TRANSMISSION IN THEIR OFFICES?	356 89	- 0	44 11
6. ARE TRADITIONAL DISINFECTING LIQUIDS LIKE LYZOL, AND OTHER DISINFECTING WIPES EFFECTIVE IN REMOVING THE VIRUS?	399 99.75	- 0	1 0.25
7. SHOULD STAFF REPORT TO WORK WITH ACUTE RESPORATORY SYMPTOMS?	390 97.5	4 1	6 1.5
8. SHOULD GLASS SEPERATORS BE INSTALLED BETWEEN THE FRONT OFFICE STAFF AND THE WAITING ROOM AREA TO DECREASE THE RISK OF STAFF TO EXPOSURE	388 97	- 0	12 3
9. SHOULD WE ASK PATIENTS TO WAIT IN THEIR CAR UNTIL WE TREAT THEM, SO THEY ARENT SITTING IN THE CRWODED WAITING ROOMS?	370 92.5	18 4.5	12 3
10. SHOULD CLINICAL STAFF WEAR N95 RESPIRATORS?	385 96.25	5 1.25	10 2.5
11. SHOULD WE CLOSE OUR PRACTICES IF WE RUN OUT OF MASKS?	250 62.5	133 33.25	17 4.25
12. SHOULD A PATIENT UNDERGO COVID-19 TEST BEFORE ANY DENTAL TREATMENT?	125 31.25	200 50	75 18.75
13. THERE ANY AVAILABLE TREATMENT?	20 5	218 54.5	162 40.5
14. IS THOROUGH WASHING OF HANDS PRIOR TO INITIATING THE DONNING PROCESS?	395 98.75	- 0	5 1.25

**FIGURE 1: REPRESENTING THE PERCENTAGES OF AGREED POPULATION.**



**DISCUSSION**

Infectious diseases a trend may be a paramount work to alert the international community to the occurrence of cases round the world including the identification of latest foci of infection<sup>18</sup>. Pro MED proved to be useful source of information about the virus and 96.25% of subjects knew

about correlation between dentistry and coronavirus<sup>19</sup>. The trajectory of this outbreak is impossible to predict, effective response requires prompt action from the standpoint of classic public health strategies to the timely development and implementation of effective counter measures 96%, 99.5% and 96.25% of the study population were aware the aerosol preventing units, uses of PPE kits and N-95 respirators respectively<sup>20</sup>. According to the Indian Council of Medical Research (ICMR), India is currently proceeding towards the third stage of the novel coronavirus transmission. The insight of this transmission have made dentists to fall in dilemma about treatment of patients , around 31.25% of dentists proceeded that patient should undergo COVID test before any dental treatment. There are various choices one can make about the parametric form of the incubation period distribution, but it is prudent not to dismiss the possibility of incubation periods up to 14 days at this stage of the pandemic<sup>21</sup> and 99.75% of dentists agreed on disinfecting their surfaces regularly in order to remove the virus. Populace, who are in close contact with patients with symptomatic and asymptomatic COVID-19, including health care workers, other patients in the hospital<sup>21</sup> and 92.5% of dentists agreed with the statement to ask their patients to wait in their respective cars in order to avoid the spread of virus, 89% of dentists agreed on preventing transmission in their offices by using of glass separators (97%) and by using minimal aerosol production units (62.5%). Kohn et al. 2003 suggested that infections can occur through the puncture of sharp instruments or direct contact between mucous membranes and contaminated hands so it is better that dentists should take strict personal protection measures and avoid or minimize operations that can produce droplets or aerosols<sup>23</sup> and 62.5% considered to avoid the treatment if there is non-availability of masks. Thus, effective infection control measures for the prevention or minimization of viral infection transmission should be implemented in clinical practice. The use of rubber dams can significantly minimize the production of saliva and blood- contaminated aerosol or spatter, particularly in clinical situations where high-speed handpieces and dental ultrasonic devices are used<sup>24</sup>. Highspeed dental handpiece without anti- retraction valves generally aspirate and expel the debris and fluids during the dental procedures. The microbes, including bacteria and virus, may further contaminate the air and water tubes within the dental unit, and thus can potentially cause cross-infection<sup>25</sup>. Private practioners should be well aware of wearing and donning of PPE and 98.75% of health care workers in our study were aware about the same. Since the beginning of the COVID-19 outbreak, and in alignment with available evidence, WHO maintains the advise, within the context of droplet and get in touch with precautions for the utilization of medical masks for normal care of COVID-19 patients and respirators for circumstances and settings where aerosol generating procedures are performed. It also continues to recommend that everybody performs hand hygiene frequently, follows respiratory etiquette recommendations and frequently clean and disinfect surfaces. These preventive measures will limit viral transmission<sup>26</sup>.

## CONCLUSION

The rise in COVID 19 cases is not coming to a halt, further no appropriate treatment is available for the same so dental professionals should be well informed and much educated about the stringent infection control measures and without the ability to prevent community infection, prevention of health care transmission will remain a challenge. Early recognition and control of the source, application of simple precautions for all patients, extraprecautions for COVID positive cases, administrative and environmental controls are the various guidelines for the infection, prevention and control (IPC). Various clinical trials about the treatment have been done and most others are in their preclinical trials but none of the trial

till date is fruitful. Similar surveys should be done from time to time during this pandemic so that knowledge about the same is increased.

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