DOI: https://doi.org/10.53350/pjmhs221631203

ORIGINAL ARTICLE

Occupational Risk Factors and Preventive Measures for Covid 19 in Prosthodontics

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ABSTRACT

Objective: The Aim of this study is to determine the occupational risk factors and preventive measure for Covid-19 in prosthodontics.

Study Design: Cross-sectional study

Place and Duration: Conducted at Nishtar institute of dentistry Multan during from the period 01 July, 2021 to 31 Dec, 2021

Methods: There were one hundred and thirteen professionals working in prosthodontics were presented in this study. Enrolled cases were aged between 22- 55 years. After obtaining informed written permission, the demographics of enrolled professionals were recorded, including age, sex, residence, occupation, and marital status.Association of risk factors in their occupation related to Covid-19 and its preventive measures were measured and calculated. Awareness of vaccine and vaccination status was also recorded. SPSS 24.0 was used to analyze all data.

Results: Among 113 cases, majority of the cases were females 73 (61.3%) and rest were males 40 (38.7%). 45 (39.8%) cases were aged between 22-28 years, 40 (35.4%) were aged between 29-34 years and 28 (24.7%) had ages > 35 years. 63 (55.8%) were married and 78 (69.02%) had urban residency. Majority were dentist 85 (75.2%) and 20 (17.7%) were dental assistants and 8 (7.1%)are dental technicians .64 (56.6%) were vaccinated and 40 (35.4%) were partially vaccinated.Most common symptoms were fever, cough, fatigue and shortness of breath. Risk factors were direct contact, not used of personal protective equipment (PPE) or lack of PPE i.e. gloves, hand wash, sanitizer and mask. Instantly change of gloves, hygienic cleaning, change of dress after job hours and social distance were the preventive measures.

Conclusion: Given the pathways of COVID-19 transmission, even dental practitioners must adjust usual methods to avoid infection. In clinical conditions, dentists must recognize the signs and symptoms and perform stringent infection control.

Keywords: Infectious Disease, Prosthodontics, Risk Factors, Symptoms

INTRODUCTION

Coronavirus outbreaks have recently been a source of new public health issues. The respiratory system of humans is the primary target of the corona virus family of positive-sense RNA viruses [1]. A number of coronavirus strains, including those linked to the Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) outbreaks in livestock, have recently been identified [2]. "The novel coronavirus" (nCoV) and "SARS-CoV-2" (SARS-CoV-2) were the first names given to the new viral strain, which had never been seen previously. Immediately upon its emergence, it was recognized by the WHO as a pandemic [3] and a major worldwide issue. Coronavirus disease 2019 (COVID-19) is rapidly spreading around the globe, prompting several countries to take drastic steps to stop it. Several new coronaviruses have been discovered recently [4]. There has been a rise in the number of cases and fatalities, which led to mandatory quarantine and home isolation in several countries [5, 6]. This has profoundly affected the everyday and professional lives of people. Patients and health care workers (HCWs) are suffering from a variety of psychological problems as a result of the outbreak, including anxiety disorders such generalized anxiety disorder (GAD), sadness, and a lack of sleep [7]. The disease's widespread transmission has also indicated its expansion among health care personnel, who have been recognized as possible carriers since they are on the front line of infected patient treatment [8].

Across the globe, concerns have been expressed concerning the spread of coronavirus from dentist offices to patients. Recently, the New York Times reported that dentistry was the profession with the highest risk of contracting nCoV-19.[9] Patients who have been exposed to the illness might easily disseminate it to the dental team and then to other patients because of the nature of the dental operations and the close proximity of the dental team to patients [10, 11].

It is common knowledge among dental teams that universal personal protective equipment and other cross-infection control methods and risk assessment are used. There has been a lot of confusion about the best Personal Protective Equipment (PPE) and working methods during the epidemic. Each nation in the globe has had to quickly adopt policies to address COVID-19 and has interpreted medical and scientific facts and recommendations from the WHO in a completely different manner. In the same way, the COVID-19 recommendations and suggestions for safe and effective dental practice have revealed a great deal of heterogeneity throughout the globe and within nations. The absence of evidence-based study on the effectiveness of the suggested recommendations may be to blame for this occurrence. We know that producing a vaccine that is safe and effective is a lengthy process; thus, we need to discover innovative, practical ways to treat patients with oral health concerns in our dental office. The long-term effects of this epidemic are not yet understood, but dental care will likely undergo a "new normal" as a result of it.

Dental clinics may be reopened or reoriented in a short amount of time according to several recommendations and regulations [12-14]. The reality is that many procedures were developed in a hurry (for legitimate reasons) and are geared toward an ideal rather than a realistic outcome. Considering the long-term need and realistic, practical solutions, this systematic review examines the risk of transmission of the COVID-19 during dental treatment and suggests paths and preventive methods to limit it.

MATERIAL AND METHODS

This cross-sectional study was conducted at Nishtar institute of dentistry Multan during from the period 01 July, 2021 to 31 Dec, 2021 and comprised of 113 professionals. After obtaining informed written permission, the demographics of enrolled professionals were recorded, including age, sex, residence, occupation, and marital status.Participants with severed medical illness, < 22 years of age and those did not provide any written consent were excluded from this study.

Preventive measures adherence is influenced by socio-demographic parameters such as education level and socioeconomic status, as well as the effect of COVID-19 on the daily lives of dental workers. For the treatment of COVID-19 in hospitals (decision No.5188/QD-BYT) Six questions were used to gauge a worker's adherence to preventive measures, including wearing personal protective equipment (PPE), correctly using face masks while caring for a patient, maintaining good hand hygiene, cleaning and disinfecting surfaces while caring for a patient, and properly disposing of waste. There were four possible answers for each question, and the final score was computed by assigning a point value from 0 to 4. (maximum score 24 points). A 5-point Likert scale was used to quantify how difficult it was for individuals to follow these preventative measures, with 1 being the least difficult and 5 being the most difficult.SPSS 24.0 was used to analyze all data.

RESULTS

Among 113 cases, majority of the cases were females 73 (61.3%) and rest were males 40 (38.7%).(fig 1)

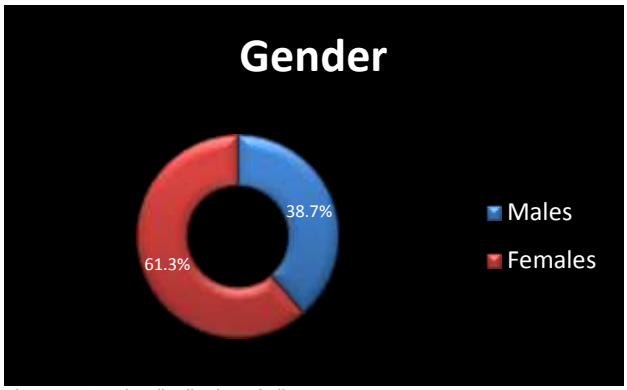

Figure-1: Gender distribution of all cases

45 (39.8%) cases were aged between 22-28 years, 40 (35.4%) were aged between 29-34 years and 28 (24.7%) had ages > 35 years. 63 (55.8%) were married and 78 (69.02%) had urban residency. Majority were doctors (dentist) 85 (75.2%), 20 (17.7%) were dental assistants and 8 (7.1%) were technicians.(table 1)

Table-1: Enrolled cases with details demographics

Variables	Frequency	Percentage
Age (years)		
22-28	45	39.8
29-34	40	35.4
>35	28	24.7
Marital status		
Married	63	55.8
Un-married	50	44.2
Profession		
Dentist	85	75.2
Dental assistants	20	17.7
Technician	8	7.1
Place of living		
Urban	78	69.02
Rural	35	30.9

Among 113 cases, 64 (56.6%) were vaccinated, 40 (35.4%) were partially vaccinated and 9 (7.9%) were non vaccinated.(table 2)

Table-2: Vaccination status among enrolled cases

Variables	Frequency	Percentage
Vaccination Status		
Complete	64	56.6
One Doze	40	35.4
Non	9	7.9
Total	113	100

According to risk factors65 (57.5%) cases believethat direct contact was the most common factor, 90 (79.6%) believe that not used of personal protective equipment (PPE) and lack of PPE was 81 (71.7%).

Table-3: Frequency of risk factors for Covid-19

Risk Factors	Frequency	Percentage
Direct Contact		
Yes	65	57.5
No	48	42.5
No Use of PPE		
Yes	90	79.6
No	23	20.4
Lack of PPE		
Yes	81	71.7
No	32	28.3

Most common personal protective equipment's were gloves which 42 (37.2%), hand wash 57 (50.4%), sanitizer 35 (30.9%) and mask 85 (75.2%) which were not regularly used in hospitals and clinics.(fig 2)

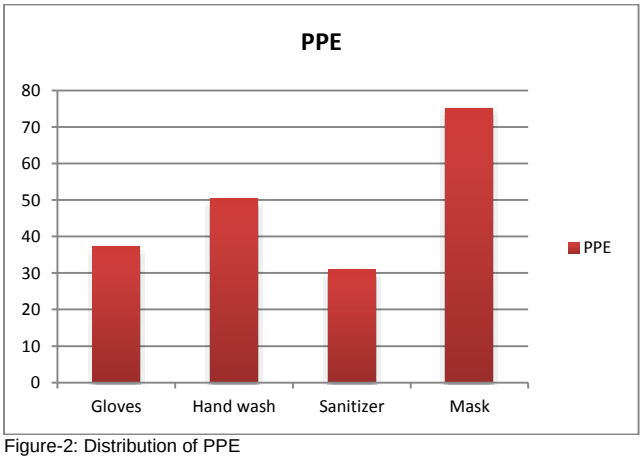

Figure-2: Distribution of PPE

Instantly change of gloves, hygienic cleaning, change of dress after job hours and social distance were the preventive measures.(table 4)

Table-4: Frequency of preventive measures among all cases

Variables	Frequency	Percentage
Preventive Measures		
Change of gloves	22	19.5
Hygienic Cleaning	36	31.9
Dress change	20	17.7
Social Distance	35	30.97
Total	113	100

DISCUSSION

Abiding by Preventative Measures there is a substantial risk of COVID-19 infection for dental care workers(DCWs) when undergoing dental treatment. Indeed, infections will be distributed from the oropharynx and oral cavity by the formation of saliva aerosols and spread through the air and on contaminated surfaces [15]. Training DCWs on infection control practices, such as hand sanitizer use, face mask usage, and maintaining social distance are all necessary to ensure that dental droplets are kept to a minimum and that air quality in dental treatment rooms is improved through the reduction of air conditioner use and enhancement of ventilation.[16,17]

In our analysis 113 prosthodontics were included. Among 113 cases, majority of the cases were females 73 (61.3%) and rest were males 40 (38.7%). 45 (39.8%) cases were aged between 22-28 years, 40 (35.4%) were aged between 29-34 years and 28 (24.7%) had ages > 35 years. 63 (55.8%) were married and 78

(69.02%) had urban residency. These findings were comparable to the previous studies.[18,19]Majority were dentist 85 (75.2%) and 20 (17.7%) were dental assistants . Most common symptoms were fever, cough, fatigue and shortness of breath.[18,20] As vital as it has always been to maintain proper oral hygiene and avoid disease, these habits are even more crucial in today's climate. The need for urgent dental care can be reduced if a person maintains a high level of oral hygiene, which can also help to remove the virus from a person's body in the early stages of infection [21] and reduce the bacterial load in the mouth and the risk of bacterial superinfection in patients with diabetes, high blood pressure, or cardiovascular disease [22].

In our study, according to risk factors 65 (57.5%) cases believe that direct contact was the most common factor, 90 (79.6%) believe that not used of personal protective equipment (PPE) and lack of PPE was 81 (71.7%).Infected people may act as carriers of COVID-19 for the duration of the virus' incubation phase. Many studies have shown that asymptomatic people may spread the illness, and this is especially true for those who are not showing any symptoms.[23] It is also very contagious on dental chairs, handles, spittoon and dental tools for up to three days at room temperature. Because of this, the new coronavirus's persistence in dental offices can only be curbed by disinfecting and cleaning the offices on a frequent basis [24]. In patients with active respiratory infections, it is the practitioner's job to determine whether or not urgent dental therapy is warranted and to delay treatment if necessary.

Most common personal protective equipment's were gloves which 42 (37.2%), hand wash 57 (50.4%), sanitizer 35 (30.9%) and mask 85 (75.2%) which were not regularly used in hospitals and clinics.[20-22] In order to prevent DHW from being infected with SARS-CoV-2, proper PPE is required. N95 or FFP2 respirator, gown, gloves, eye and face protection, as well as aprons, were suggested by the WHO in February 2020 for DHW while undertaking aerosol-generating operations [25]. A worldwide deficit of PPE [26, 27] hampered the implementation of these guidelines at the start of the COVID-19 epidemic, however.Instantly change of gloves, hygienic cleaning, change of dress after job hours and social distance were the preventive measures. 64 (56.6%) were vaccinated and 40 (35.4%) were partially vaccinated.Nearly half (45%) of 248 American dentistry students surveyed by Kelekar et al. refused to get a COVID-19 vaccine. According to the survey, 55% of respondents stated they would be vaccinated as soon as a vaccine was available.[28]

Even though the number of ODs reported after the implementation of COVID-19 has increased significantly, the illness is likely still being underreported. When an infection is minor or asymptomatic, it might be difficult to tell the difference. This might lead to infections being undetected.

CONCLUSION

Given the pathways of COVID-19 transmission, even dental practitioners must adjust usual methods to avoid infection. In clinical conditions, dentists must recognize the signs and symptoms and perform stringent infection control.

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