Fear and Practice Modifications among Nepalese Prosthodontists during COVID-19 Outbreak

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ABSTRACT

Introduction: The COVID-19 pandemic poses significant risks to healthcare professionals, including dental specialists such as prosthodontists. Prosthodontists face unique challenges due to their close contact with patients and the nature of their procedures, which often involve multiple visits and exposure to saliva, blood, and aerosols. This study aims to assess the anxiety and fear experienced by prosthodontists in Nepal and evaluate their knowledge of practice modifications to mitigate COVID-19 risks.

Methods: A hospital-based descriptive cross-sectional study was conducted from September 15 to October 15, 2020. Self-administered questionnaires were distributed online to registered prosthodontists in Nepal. The survey included 33 closed-ended questions divided into two sections: socio-demographic characteristics and fear/anxiety assessment, and practice modifications. Responses were collected via Google Forms and analyzed using the Statistical Package for Social Sciences (SPSS version 25).

Results: The study included 73 participants from various provinces and work settings. The majority (90.4%) were within the age group of 30-60 years, with a nearly equal gender distribution. Most prosthodontists (61.6%) expressed fear of transmitting the virus to their families, and 39.7% felt anxious when treating patients with potential COVID-19 symptoms. More than half (54.8%) had not resumed regular prosthodontic practice, although 87.7% provided emergency care. High adherence to safety protocols was noted, although gaps existed in the use of disposable equipment and single-use items.

Conclusions: The findings highlight significant anxiety and fear among prosthodontists in Nepal due to COVID-19, emphasizing the need for continued education and support. Adherence to updated guidelines, enhanced safety protocols and psychological support can help alleviate apprehensions and improve the overall practice environment.

Key words: COVID; Dental practice; Fear; Prosthodontists

INTRODUCTION

The novel coronavirus disease (COVID-19) possesses the potential to induce severe acute respiratory tract infections in affected individuals and primarily spreads through person-to-person contact via hands, saliva, nasal droplets, and surface contact.[1] World Health Organization (WHO) declared it a manageable pandemic on March 11, 2020.[2,3] While the need for providing healthcare facilities cannot be overstated, the nature of their work poses a serious risk of COVID-19 infection among dental professionals.

Dental professionals, including Prosthodontists, have encountered patients exhibiting symptoms or confirmed cases of SARS-CoV-2 infection. Prosthodontics, a specialized field within

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dentistry, focuses on providing services to the geriatric population such as Complete Dentures, Removable Dentures, and Implant-supported prostheses, as well as Crown and Bridges to replace missing teeth in adults of any age group.[4,5] Prosthodontists face heightened challenges due to factors such as the high concentration of copious saliva in trays and dentures, exposure to blood during pre-prosthetic surgeries and implant placement, and exposure to aerosols during tooth preparation for crown and bridge procedures.[6]

Unlike many routine dental procedures that can be completed in a single session, prosthodontic treatments often demand multiple visits, presenting a unique challenge to ensure bilateral safety with each appointment. Unlike other specialties, a critical aspect of prosthodontic practice lies in laboratory services. Laboratory support is indispensable whether it involves complete dentures, partial dentures, or crown-to-bridge work. It is crucial to recognize that laboratory work involves a multiple chain of individuals, from the dentist and assistant to the runner, lab supervisor, and laboratory technician.[6]

This study aims to evaluate the anxiety and fear experienced by Prosthodontists working amid a viral outbreak in Nepal. The study also intends to assess their knowledge regarding various practice modifications to mitigate the risks associated with the novel coronavirus disease (COVID-19) outbreak.

METHODS

This hospital-based descriptive cross-sectional study was conducted from 15th September to 15th October 2020. Self-administered questionnaires were developed and validated by the experts. Ethical clearance for the study was obtained from the Institutional Review Committee of People's Dental College & amp; Hospital Naya Bazar, Kathmandu (PDCH-IRC Ref Nos 01. CH Nos 02.2077/2078) prior to commencement of study. The study participants included the prosthodontists practicing in Nepal. The target sample population involved all the prosthodontists as identified through the records of the Nepalese Prosthodontists Society at the time of survey. Prosthodontists not registered within the Nepal Medical Council were excluded. The questions were formatted using Google Forms for online distribution. Links to the questionnaire were disseminated via social media and individual e-mails to the participants, with responses collected through online survey submission. The questionnaire comprised 33 closed-ended questions, divided into two sections. The first section focused on socio-demographic characteristics and assessed Prosthodontists' fear and anxiety regarding susceptibility to COVID-19 infection. Eight questions were dedicated to this assessment and the responses were recorded on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree', scored accordingly from 1 to 5. The second section aimed to gather information about the practice modifications to address the COVID-19, aligning with current guidelines. The responses to the 25 questions were categorized as 'yes', 'no', and 'don't know.' Additional queries were asked on certain questions (9,18,20, and 23) for specific responses (yes or no). An informed questionnaire accompanied the survey, outlining the study's objectives and assurance of the confidentiality of the data. The participants were required to indicate their agreement by pressing 'I agree' on the consent form before proceeding to the questionnaire.

A total of 73 participants from various dental colleges, hospitals, and clinics in Nepal participated in the study and completed the questionnaire. The data collected through Google Forms were transferred to Microsoft Excel and then imported into the Statistical

Package for Social Sciences (SPSS version 25) for analysis. Likert scale scores were expressed as Mean (Standard Deviation). The findings were presented in tabular format for better comprehension.

RESULTS

A total of 73 participants completed and submitted the questionnaire. The province-wise distribution of the participants was as follows: Province 1 (n = 2), Province 2 (n = 5), Province 3 (n = 55) Province 4 (n = 5), and Province 5 (n = 6).

The socio-demographic characteristics of the participants are outlined in Table 1. The majority (66, 90.4%) fell within the age group of 30-60 years, and more than half of them (39, 53.4%) were male. Most of them (57, 78.1%) worked in private set up, predominantly in hospitals (33, 45.2%).

Table 2 illustrates the assessment of fear and anxiety among the study participants regarding COVID-19. The overall mean score was 31.06 ± 3.74, with 40 being the maximum possible score. The majority of participants (45, 61.6%) expressed fear about potentially transmitting the infection from outside back to their families. This response was followed by concerns about feeling anxious during providing treatment to a patient who is coughing or suspected of being infected with COVID-19 (29, 39.7%).

Table 3 depicts the practice modifications of Nepalese prosthodontists during the COVID-19 outbreak. More than half of them (40, 54.8%) had not yet resumed their prosthodontic clinical practice. However, the majority (64, 87.7%) were actively engaged in providing dental emergency and urgent care services. Additionally, a significant portion (65, 89%) were deferring dental treatment for patients displaying showing suspicious symptoms. Most prosthodontists (69, 94.5%) were adhering to safety protocols during clinical procedures. Most of them (60, 80.2%) also ensured that waste management staff had access to sufficient personal protective equipment (PPE).

Table 1: Demographic profile of Nepalese prosthodontists (N = 73).

Demographics	Categories	Frequency (%)
Age	< 30 years	7 (9.6)
	30-60 years	66 (90.4)
Gender	Female	34 (46.6)
	Male	39 (53.4)
Practice address	Province 1	2 (2.7)
	Province 2	5 (6.8)
	Province 3	55 (75.3)
	Province 4	5 (6.8)
	Province 5	6 (8.2)
Workplace	Government	11 (15.1)
	Private	57 (78.1)
	Semi government	5 (6.8)
Work setting	Clinic	11 (15.1)
	Hospital	33 (45.2)
	Both	29 (39.7)

Table 2: Fear and anxiety assessment of Nepalese prosthodontists

Question	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	Mean (S.D.)
I am afraid of getting infected with COVID-19 from a patient and co-worker.	3 (4.1)	2 (2.7)	9 (12.3)	41 (56.2)	18 (24.7)	3.95 (0.92)
I am anxious during providing treatment to a patient who is coughing or suspected of being infected with COVID-19.	-	2 (2.7)	3 (4.1)	39 (53.4)	29 (39.7)	4.30 (0.68)
I am afraid of getting quarantined if got infected.	2 (2.7)	11 (15.1)	17 (23.3)	29 (39.7)	14 (19.2)	3.58 (1.05)
I want to close my dental practice until the number of covid-19 cases starts declining.	3 (4.1)	20 (27.4)	19 (26.0)	25 (34.2)	6 (8.2)	3.15 (1.05)
I am anxious about the cost of treatment if I get infected.	1 (1.4)	12 (16.4)	20 (27.4)	28 (38.4)	12 (16.4)	3.15 (1.05)
I have fear of transmission of COVID-19 during my daily routine work.	-	1 (1.4)	17 (23.3)	39 (53.4)	16 (21.9)	3.96 (0.71)
I have fear that I would carry the infection from outside back to my family	-	-	2 (2.7)	26 (35.6)	45 (61.6)	4.59 (0.54)
I am aware of authority to contact if I come across a patient with suspected case of COVID-19 infection.	2 (2.7)	2 (2.7)	5 (6.8)	47 (64.4)	17 (23.3)	4.03 (0.81)

Note: The values are expressed in frequency (%).

Table 3: Practice modifications of Nepalese prosthodontists during the COVID-19 outbreak

S.N.	Question	Yes	No	Don't know
1	Are you aware of mode of transmission of COVID-19?	72 (98.6)	-	1 (1.4)
2	Are you updated with current guidelines for cross infection control regarding COVID-19?	66 (90.4)	2 (2.7)	5 (6.8)
3	Have you started your regular Prosthodontic clinical practice?	32 (43.8)	40 (54.8)	1 (1.4)
4	Are you doing dental emergency and urgency works?	64 (87.7)	8 (11.0)	1 (1.4)
5	Are you currently asking every patient's travel and fever history before performing dental treatment?	71 (97.3)	2 (2.7)	-
6	Are you currently taking every patient's body temperature before performing dental treatment?	51 (69.9)	20 (27.4)	2 (2.7)
7	Are you deferring dental treatment of patients showing suspicious symptoms?	65 (89)	6 (8.2)	2 (2.7)
8	Are you using safety measures (i.e. PPE) during your clinical procedures?	69 (94.5)	2 (2.7)	2 (2.7)
9	Do you ask every patient to rinse his/her mouth with anti- microbial mouthwash before treatment?	66 (90.4)	7 (9.6)	-
	If your answer is yes, then select what are you using?	- H_2O_2 (1.5%): 9 (13.6%) - Povidone Iodine (1%): 57 (86.4%)		
10	Do you use hand sanitizer before treatment of every patient?	68 (93.2)	5 (6.8)	-
11	Do you use hand sanitizer after treatment of every patient?	70 (95.9)	3 (4.1)	-
12	Is your Prosthodontic practice limited to non-aerosol generating procedures?	33 (45.2)	40 (54.8)	-
13	Do you use high volume suction in your practice for every patient?	31 (42.5)	40 (54.8)	2 (2.7)
14	Have you started new prosthodontic cases?	37 (50.7)	35 (47.9)	1 (1.4)
15	Do you autoclave hand pieces for every patient?	34 (46.6)	33 (45.2)	6 (8.2)
16	Do you disinfect hand pieces for every patient?	66 (90.4)	4 (5.5)	3 (4.1)
17	Do you use low speed for hand pieces with anti-retraction valves for aerosol generating procedures?	9 (12.3)	53 (72.6)	11 (15.1)
18	Do you dispose of single-use dental burs?	12 (16.4)	54 (74)	7 (9.6)
	If no, which method of disinfection do you use?	- Dry heat oven: 10 (18.5%) - Aldehyde/Phenols: 24 (44.4%) - Dry heat oven/Aldehyde/Phenols: 5 (9.3%) - Ultrasonic baths: 8 (14.8%) - Ultrasonic baths/Aldehyde/Phenols: 3 (5.6%) - Ultrasonic baths/Dry heat oven: 3 (5.6%) - Ultrasonic baths/Ethylene oxide: 1(1.8%)		

19	Do you use disposable impression trays?	9 (12.3)	64 (87.7)	-
20	Do you disinfect dental impression routinely before sending to dental laboratory?	51 (69.9)	16 (21.9)	6 (8.2)
	If yes, which disinfectant do you use?	- 0.5% Sodium hypochlorite: 21 (41.2%) - 2% Glutaraldehyde: 15 (29.4%) - Sodium hypochlorite/Glutaraldehyde: 4 (7.8%) - Chlorine compounds: 2 (3.9%) - Sodium hypochlorite/ Chlorine compounds: 2 (3.9%) - Aldehyde/Phenols: 6 (11.8%) - Iodophors: 1(2%)		
21	Do you use a zip-lock bag to send the impression to the laboratory?	36 (49.3)	33 (45.2)	4 (5.5)
22	Do you disinfect the dental prosthesis before delivery to the patient?	56 (76.7)	16 (21.9)	1 (1.4)
23	Do you disinfect operating rooms?	73 (100%)	-	-
	If yes, how do you disinfect operating rooms?	- Fogging with hydrogen peroxide (8-10%): 10 (13.7%) - Fumigation with $KMNO_4$ & 40% formaldehyde: 16 (21.9%) - None of the above: 47 (64.4%)		
24	Do you provide waste management staffs with adequate PPE?	60 (82.2)	3 (4.1)	10 (13.7)
25	Do you dispose waste and disposable PPE in double layered yellow bags and color-coded bins?	34 (46.6)	25 (34.2)	14 (19.2)

DISCUSSION

Given the media frenzy and significant loss of lives associated with COVID-19, fear and anxiety are the natural responses. Healthcare professionals face a heightened risk of contracting the virus as they continuously deal with sick patients. Dental professionals, in particular, have high likelihood of transmission through droplets and aerosols.[6] This study seeks to evaluate the levels of fear and anxiety related to COVID-19 specifically among prosthodontists, who may face an even greater risk due to the nature of their work.

In this study, a large number of prosthodontists had fear getting infected by their patients or co-workers. This finding is similar to the perception of other healthcare workers from Nepal.[7] The majority of prosthodontists harbored worries about providing treatment to patients with suspicious symptoms. The fear is probably justified as COVID-19 has rapidly affected a wide population globally. Despite facing potential economic hardships and experiencing delays in dental care, nearly half of the prosthodontists surveyed indicated a desire to temporarily close their practice. This inclination aligns with current recommendations advising the deferral of non-essential dental procedures.[8,9] Other genuine fears expressed in the present study were anxiety to provide treatment to patients who is coughing, afraid that he/she might have to get quarantined if infected, carrying infections from their dental practices

to their families and anxiousness regarding burden of cost of treatment. This aligns well with other findings reported about fear and anxiety among dental practitioners. [10-12] The coronavirus can last on various surfaces for a few hours to a few days. Stress attributed to cost incurred should also be taken into consideration. In the present study, more than half (54.8%) had anxiousness regarding cost of treatment. These findings are similar with studies among various dental practitioners from various countries including Saudi Arabia and India.[10, 13]

The current research revealed that most participants were well-versed about the transmission mode of COVID-19. It was promising to note that a significant proportion of dentists were knowledgeable about the latest guidelines, which include inquiring about travel history and documenting patients' body temperature. Many patients adhered to various preventive measures including autoclaving hand pieces, disinfecting dental trays, using hand sanitizer before and after practice, asking patients to rinse with mouthwash, disinfection of prosthesis, and providing PPEs to staffs. However, most of them did not dispose of single-use dental burs and did not use disposable impression trays. These findings are consistent with findings from several country-specific and multi countries surveys.[10,13]

Amid the evident fear and anxiety exhibited by the dental community towards COVID-19, it is imperative to employ psychological coping mechanisms and strategies to maintain composure and ensure efficient functioning. Dentists' apprehensions about contracting COVID-19 could be significantly alleviated if they and other dental healthcare workers rigorously adhere to the pertinent recommendations issued by regulatory authorities. These guidelines encompass universal cross-infection control protocols, augmented by additional precautions in instances where patients exhibit any suspicious symptoms.[8,9, 12]

LIMITATIONS OF STUDY

1. Since the data was collected through self-administered questionnaires, there is a possibility of response bias. Participants might have answered in a socially desirable manner rather than providing their true feelings and practices.
2. The cross-sectional design does not account for changes in fear levels and practice modifications over the course of the pandemic. Longitudinal studies could provide a more comprehensive view of how these factors evolve.
3. The use of a Likert scale to measure fear and anxiety might not have captured the full complexity of these emotions. Additionally, the interpretation of the scale points could have varied among participants, potentially affecting the consistency of responses.

CONCLUSIONS

The study reveals high levels of anxiety and fear among Nepalese prosthodontists during the COVID-19 pandemic, despite adherence to safety protocols. While many continue to provide emergency care, there is a significant need for continued education, psychological support, and improved access to disposable equipment to enhance their confidence and safety in clinical practice.

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