

Impact of COVID-19 on Surgical Practices among Maxillofacial Surgeons of Nepal

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ABSTRACT



Introduction: Oral and maxillofacial surgeons come into contact with the saliva, mucus, blood during the examination of patients. Coronavirus disease (COVID-19) is believed to spread primarily via respiratory droplets that put oral and maxillofacial surgeons at high risk of contracting the infection. COVID-19 has led to changes in maxillofacial surgical practices. There is a gap in knowledge regarding its real impact. The objective of this study was to evaluate the impact of COVID-19 on maxillofacial surgery practices in Nepal.

Methods: A web-based cross-sectional study was conducted among all the members of the Nepalese Association of Oral and Maxillofacial Surgeons (NAOMS) practicing in Nepal. The survey was conducted from 25 June 2020 to 25 July 2020. The total enumeration sampling was used to collect information and 46 study participants enrolled in the study. A semi-structured questionnaire was developed in Google Forms and sent to study participants through an internet link.

Results: Only 46 participated among 70 invitations, with a response rate of 65.71%. Among the study participants, the majority (n=35, 76.08%) used personal protective equipment (PPE) for minor procedures and in the operating room. Most surgeons (n=37, 80.43%) asked to test their patients for COVID-19 prior to shifting to the Operating room. More than half of the surgeons were doing both elective and emergency surgeries (n=24, 52.17%). Almost all surgeons (n=44, 95.65%) responded that they have a minimized aerosol-generating procedure. Almost two-thirds of surgeons (n=29, 63.04%) did not feel safe while working in a hospital.

Conclusion: Despite the use of PPE by the majority of Maxillofacial Surgeons and asking their patients for the COVID-19 test, they still did not feel safe working at the hospital.

Keywords: COVID-19, Oral and Maxillofacial Surgeon, Pandemic, Personal Protective Equipment, Polymerase Chain Reaction

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INTRODUCTION

World Health Organization (WHO) declared coronavirus disease (COVID-19) as a pandemic on 11 March 2020 as it started to spread around the world.¹ In Nepal, the first case was reported on 23 January 2020, a 32-year old Nepalese man returning from Wuhan.² The second case of COVID-19 was confirmed on 23 March 2020 in Kathmandu which was followed by a nationwide lockdown from 24 March 2020. As of 27 July 2020 Nepal has 18,752 cases and 48 casualties.³

Maxillofacial surgeons inevitably come into contact with the oral cavity and with patient's secretions, puts them in a situation of the high risk of contracting the infection and becoming, in turn, a source of contagion.⁴ Maxillofacial surgeons are exposed to aerosol-generating procedures during wound irrigation, use of high-speed hand-pieces, piezoelectrics, etc. which are associated with an increased risk of transmission of the virus.⁵ Maxillofacial surgeons are not front liners for management of the COVID-19 pandemic however they are the first ones to manage patients with maxillofacial emergencies such as maxillofacial injuries and facial space infections.

Data from China show that around four in five coronavirus infections caused no illness.⁶ Transmission of COVID-19 through asymptomatic carriers via person-to-person contact was observed in many reports.^{7,8} All patients should be assumed to be infective and necessary precautions should be taken.^{9,10} Maxillofacial surgeons have started to change their practices according to various guidelines that have been published to combat COVID-19.¹¹⁻¹³ Survey done by van der Tas et al have shown more than 80% of all surgeons in the different regions stopped performing elective

surgery.¹⁴ There is a gap in knowledge regarding its real impact. The objective of this study was to evaluate the impact of COVID-19 on maxillofacial surgery practices in Nepal.

MATERIAL AND METHODS

A web-based cross-sectional study was conducted among all the members of the Nepalese Association of Oral and Maxillofacial Surgeons (NAOMS) practicing in Nepal. The survey was conducted from 25 June to 25 July 2020. Ethical clearance was taken from the Institutional Review Committee of Birat Medical College Teaching Hospital and informed web-based consent taken from study participants.

The total enumeration sampling was used to collect information and 46 study participants were enrolled in the study. A semi-structured questionnaire was developed in Google Forms. The questionnaire internet link was distributed by email, Facebook, and Viber on 25 June 2020. On 3 June 2020 questionnaire was sent for second time and response collection was closed on 10 July 2020. The questionnaire consisted of 20 questions with four parts. The first part included their working province, second part about their hospital, third part about changes in general practice, and fourth part about their trauma practices in COVID-19 pandemic. The anonymity and confidentiality of the data was maintained. Data was entered in Microsoft Excel 2013 and analyzed by Statistical Package for the Social Sciences (SPSS) version 23.

RESULTS

Out of 70 invitations sent to maxillofacial surgeons, only 46 participated, with a response rate of 65.71%. Bagmati province (n=27, 58.7%) had maximum numbers of oral

and maxillofacial surgeons that responded followed by province 1 (n=11, 23.9%), however there was no response from Karnali and Sudurpaschim province (Figure 1).

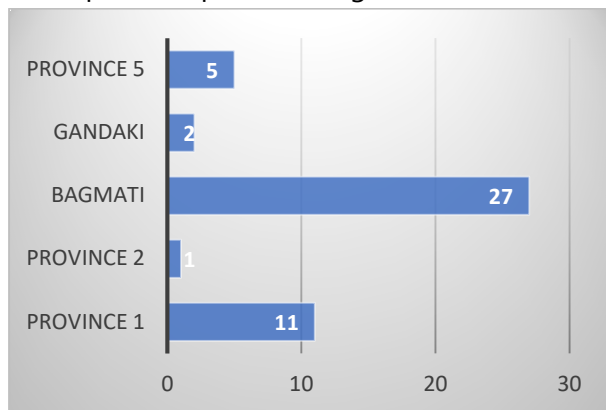


Figure 1: Province wise distribution of practice of Maxillofacial surgeons (n=46)

Table 1: Characteristics of workplace (n=46)

Questions	Response n (%)
Where do you work?	
Government Hospital	6(13%)
Medical College (Government/Private)	6(13%)
Dental College (Government/Private)	22(48%)
Private Hospital/Clinic	12(26%)
Is your OPD currently open?	
Yes	45(98%)
No	1(2%)
Was your OPD closed during any time of Pandemic?	
Yes (less than 15days)	8(17%)
Yes (more than 15days)	17(37%)
No	21(46%)
Did your hospital provide COVID 19 guidelines to follow during the Pandemic?	
Yes	33(72%)
No	13(28%)
What types of personal protective devices are provided by your hospital?	
Surgical mask only	8(17%)
N95 mask only	3(7%)
Personal protective equipment	35(76%)

Most surgeons were associated with dental colleges (n=22, 48%). There was an equal number of surgeons practicing at medical college and government hospitals (n=6, 13%). Almost all surgeons (n=45, 98%) said

that their OPDs were open, however, 54% surgeons (n=25) told they were closed during the initial lockdown in the country. Less than half of surgeons (n=21, 46%) said their OPDs were never closed. Most surgeons (n=33, 72%) were provided with guidelines to be followed during the outbreak by their hospital. More than half of surgeons (n=35, 76%) were provided with personal protective equipment (PPE) by their respective hospitals (Table 1).

Table 2: Characteristics of General Practice (n=46)

Questions	Response n (%)
What are the procedures that you are doing?	
Emergency only	22(48%)
Emergency and elective cases	24(52%)
Do you wear PPE during examinations of patients?	
Yes	14(30%)
No	32(70%)
Do you wear PPE during minor procedures?	
Yes	35(76%)
No	11(24%)
Do you wear PPE in the operating room?	
Yes	35(76%)
No	11(24%)
Do you test your patient for COVID -19 before shifting to the operating room?	
Yes (PCR)	26(56%)
Yes (RDT)	11(24%)
No	9(20%)
What do you prefer as antimicrobial mouthrinse?	
Chlorhexidine	11(24%)
Povidone-iodine	35(76%)
Have you minimized aerosol-generating procedures?	
Yes	44(96%)
No	2(4%)
Have you postponed any surgery you would have done due to COVID-19?	
Yes	34(74%)
No	12(26%)
Have you been asked to manage COVID-19 patients?	
Yes	8(17%)
No	38(83%)
Do you feel safe working in the hospital?	
Yes	17(37%)
No	29(63%)

Surgeons that were doing both elective and emergency cases were 52% (n=24) whereas less than half (n=22, 48%) were doing only emergency cases. Most surgeons (n=32, 70%)

didn't use PPE during the examination of patients however the majority of surgeons (n=35, 76%) used PPE during minor procedures and in the operating room. Most surgeons (n=37, 80%) asked their patients for the COVID-19 test prior to shifting to the operating room. The majority of surgeons (n=35, 76%) preferred povidone-iodine as an antimicrobial mouthrinse compared to chlorhexidine. Almost all surgeons (n=44, 96%) responded that they have minimized aerosol-generating procedures. Most surgeons (n=34, 74%) have postponed surgeries due to COVID-19 pandemic. Few surgeons (n=8, 17%) were asked to manage COVID-19 patients. More than half of the surgeons (n=29, 63%) didn't feel safe working in the hospital (Table 2).

Table 3: Characteristics of Trauma Practice (n=46)

Questions	Response n (%)
Is there a change in the number of patients visiting with maxillofacial trauma?	
Increased	0
Decreased	41(89%)
Same	5(11%)
Have you changed your treatment modalities for fracture management?	
Yes	20(43%)
No	26(57%)
What do you prefer for fracture management during this Pandemic?	
Closed reduction	23(50%)
Open reduction and internal fixation	23(50%)
Do you prefer a transcutaneous approach rather than an intraoral approach?	
Yes	17(37%)
No	29(63%)

The majority of Surgeons (n=41, 89%) felt that there was a decrease in the incidence of trauma. More than half of surgeons (n=26, 57%) managed trauma patients as before the pandemic without changing any treatment

modalities. There was an equal number of surgeons that preferred open reduction and internal fixation (ORIF) and closed reduction (n=23, 50%). Less than half of surgeons (n=17, 37%) preferred a transcutaneous approach rather than an intraoral approach for fracture management (Table 3).

DISCUSSION

We found that more than half of oral and maxillofacial surgeons (n=27, 58.7%) practiced in Bagmati province which may be due to more opportunities for them in this province as there are more central Government hospitals, Medical, Dental colleges, and sophisticated private hospitals compared to other provinces. There was no response from Karnali and Sudurpaschim province. An explanation for this could be due to lesser opportunities in these provinces as there are no medical and dental colleges in these provinces so there are few surgeons or none. More than half of surgeons (n=25, 54%) said that their OPDs were closed during the pandemic at some point of time but the majority of surgeons OPDs (n=45, 98%) were open at the time of study. This may be due to the limited availability of resources and literature on COVID-19 at the initial period. Gradually various guidelines were published on maxillofacial practices during the COVID-19 and resources were also available that might have given confidence for the surgeons to open their OPD.¹¹⁻¹³ Majority of surgeons (n=33, 72%) said that their hospitals provided guidelines to follow during the COVID 19 pandemic, which is also reported by Maffia et al on his global survey (82%, n=128).¹⁵ This is a good initiative taken by the hospitals for patient and professional safety.

More than half of surgeons (n=35, 76%) were provided with PPE. A study done by van der Tas et al at a global survey reported 47.3% were provided with PPE.¹⁴ More than half of the surgeons (n=24, 52%) were doing both elective and emergency surgeries, in contrast, to a study done by van der Tas where only (13.3%) were doing elective surgeries.¹⁴ Differences could be due to the fact that more than half of surgeons had their OPDs closed during the initial phase that led to increase in the pending cases of surgeons, so they had to operate elective cases as well. Also, oral cancer surgery, cleft lip, and palate cases come under elective cases but they can't be delayed for a long time. In our study most surgeons 70% (n=32) did not use PPE during the examination of patients as wearing a surgical mask, the use of goggles and gloves is recommended and PPE is not required for examination.¹⁰

The majority of surgeons (n=37, 80%) have started to ask their patients for COVID-19 screening before shifting to the operating room. Zimmermann et al and Ida et al have advised PCR tests in their studies.^{10,16} However, few surgeons were not able to send for PCR tests due to the availability of few centers in Nepal. Majority of Surgeons (n=41, 89%) felt that there was a decrease in the incidence of trauma which may be due to lock down and travel restrictions being imposed to combat COVID-19. There were equal number of surgeons that preferred ORIF and closed reduction (n=23, 50%) despite the guidelines by AO CMF advocating for closed reduction.¹³ This may be due to the fact that patients have to be placed in Intermaxillary Fixation (IMF) and have to remain in follow up for 4-6 weeks, and in case of emergencies for IMF release patients have to visit the hospital which is difficult during the lockdown. Less than half of

surgeons (n=17, 37%) preferred a transcutaneous approach rather than an intraoral approach for fracture management even though AO CMF advises a transcutaneous approach.¹³ This may be due to the patient's concern over extra oral scar and also that all fracture sites can't be assessed by an extra-oral approach only. One needs to work inside the oral cavity for arch bar placement, IMF to achieve correct occlusion.

More than half of surgeons (n=35, 76%) preferred povidone-iodine as an antimicrobial mouth rinse as chlorhexidine may not be effective to kill severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Since SARS-CoV-2 is vulnerable to oxidation, a pre-procedural mouth rinse containing oxidative agents such as 0.2% povidone is recommended.¹⁷⁻¹⁹ Few oral and maxillofacial surgeons (n=8, 17%) were asked to manage COVID-19 patients which shows that maxillofacial surgeons should always be prepared to manage COVID-19 patients even though they are not frontline figures. More than half of surgeons (n=29, 63%) didn't feel safe working in hospitals, which is more than in the study by Maffia et al (48.1%, n=75).¹²

Hospitals should be generous enough to provide resources and the Government should take initiative as well. So, that all maxillofacial surgeons can work without any fear for their patients during this COVID-19 pandemic. The overcrowding of patients in hospitals is another challenge. In our context, Female Community Health Volunteers can help to advocate for the community people regarding an unnecessary visit to hospital.²⁰

CONCLUSION

This study shows that oral and maxillofacial surgeons are changing their practices to combat COVID-19 pandemic. Most surgeons preferred using PPE during the minor procedure and in the operating rooms. Majority of surgeons have started to ask their patients for COVID-19 test before shifting to the Operating room. Despite all these changes in their practices, more than half of surgeons

still did not feel safe working at the hospital which is a matter of concern. It is the responsibility of the Government, hospitals, and everyone to create a safe working environment for all.

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