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A Cross Sectional analysis on the Impact of COVID-19 Pandemic on Plastic Surgery among Plastic Surgeons in India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Background: The COVID-19 pandemic reduced the amount of elective procedures dramatically. We, as healthcare workers, are at grave danger of contracting COVID-19. It is consequently critical for plastic surgeons to maintain their safety while attempting to resume routine activities as soon as possible. The goal of this research is to learn more about plastic surgery practises during the COVID-19 pandemic. We plan to serve as many people as possible while conserving medical resources for future crises.
Objective: To study the impact of COVID-19 pandemic on plastic surgery among plastic surgeons in India
Materials and Methods: A cross-sectional study was carried out using a questionnaire. The study

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population is made up of plastic surgeons, and the study location was chosen from several hospitals in India. The study duration was 6 months. Data was obtained using the snowball sampling method using a pre-tested, semi-structured questionnaire with 27 questions. The data was entered into an excel spreadsheet and analysed with SPSS version 16 software, with Fisher's exact test used for statistical analysis.

Results: A total of 61 participants were included in the study. The majority (60.7%) do not work in COVID-19 care in their hospital but the majority of the participants who took part in this study work in a hospital which is recognised as a COVID-19 centre for treatment (65.6%). 31 participants in their working hospitals there are more than 100 COVID-19 patients are being treated currently in Intensive Care Unit (ICU) and covid ward (50.8%) and but majority of the participants do not work in COVID-19 centre (60.7%). The Association between centres having separate wards for COVID and non-COVID patients and whether plastic surgeons working in COVID-19 centre on applying fisher's exact test the p-value was found to be 0.215. The Association between centres having separate wards for COVID and non-COVID patients and practicing microsurgery during this pandemic on applying Fisher's exact test the p-value was found to be 0.884. The Association between screening patients for COVID during emergency and group of patients operated without waiting for COVID report during emergency on applying Fisher's exact test the p-value was found to be 0.408

Conclusion: The current study demonstrates how the COVID-19 epidemic has affected the plastic surgery department and imposed restrictions. Plastic surgeons should be kept up to speed and informed on the latest information and techniques for treating this problem, as well as infection prevention and control. Using online lectures and webinars to continue education for young plastic surgery trainees is beneficial during this time.

Keywords: COVID-19; plastic surgery; plastic surgeons.

1. INTRODUCTION

The COVID 19 outbreak has led to a pandemic that posed great challenges in the medical field. The COVID-19 has spread around the globe in an unprecedented manner. As a result, doctors around the world had and still have to face the largest medical challenge of the 21st century [1]. Following the nationwide lockdown which was imposed by the Government of India from March 24th the Center for Disease Control and Prevention(CDC) and the Ministry of Health and Family Welfare, Government of India issued guidelines that restrain from Out Patient Department (OPD) and elective surgeries to all the hospitals in India during the pandemic. Many elective and nonessential surgeries were postponed worldwide in an effort to limit the spread of disease and to conserve resources. The present COVID-19 pandemic has had a significant impact on people's daily lives, as well as the field of plastic surgery. As doctors, it is our obligation to minimise SARS CoV-2 viral transmission from person to person, hence slowing the uncontrolled, exponential increase in new cases [2]. Our main goal is to keep the exponential infection curve flat and not overburden the restricted number of hospital beds, critical care beds, respirators, and extracorporeal membrane oxygenation (ECMO) devices available. At the same time, we must use disposable medical products wisely, as they are frequently in short supply, and focus them on the hospitals where they are most required [3]. With elective surgery accounting for the majority of plastic surgery practise, this was a big setback for our specialty. In times of physical distance, technology has taken over teaching and medical assistance through virtual teaching and telemedicine [4]. As a result, we undertook a poll to examine COVID-19's impact on plastic surgery training and practise, with the goal of hearing from plastic surgeons themselves. The study protocol included the distribution of an online survey among various plastic surgeons across India, addressing the impact of the COVID-19 epidemic on the professional and personal life of plastic surgeons in India.

2. METHODOLOGY

With the above background, a questionnaire-based cross-sectional study was conducted. The study location was chosen to be several hospitals in India, and the study lasted 6 months. The study population is comprised of plastic surgeons. A 27-question pre-tested, semi-structured questionnaire was used, and data was

collected via Google Forms by using the snowball sampling approach. About 80 plastic surgeons were sent the Google forms containing the questionnaire. The survey received responses from 61 plastic surgeons.. Consultants in India who practise plastic surgery in government or private colleges were included in the study, but unwilling individuals were excluded. The data will be placed into an excel spreadsheet and analysed using SPSS software version 16, with Fisher's exact test used for statistical analysis.

3. RESULTS

A total of 61 plastic surgeons were included in the study. The majority i.e 37/61 (60.7%) do not work in COVID-19 care in their hospital but the majority of the participants who took part in this study work in a hospital that is recognised as a COVID-19 centre for treatment i.e 40/61(65.6%) hospitals recognised as COVID-19 centre (Table 1). Among 61 participants who took part in this research, 31 participants in their working hospitals there are more than 100 COVID-19 patients are being treated currently in ICU and covid ward, i.e 31/61 (50.8%) and but the majority of the participants do not work in COVID-19 centre, i.e 37/61 (60.7%). (Table 2). Most of the participants working in their centres have separate wards for COVID and Non-COVID patients, i.e 48/61 (78.7%). Among those 48 participants, 21 plastic surgeons (43.8%) work in COVID-19 centre whereas 27 plastic surgeons (56.3%) do not work in COVID-19 centre. But among 61 plastic surgeons majority of the participants do not work in COVID-19 centre, i.e 37/61 (60.7%). The Association between centre having separate wards for COVID and non-COVID patients and whether plastic surgeons working in COVID-19 centre on applying fishers exact test the p-value was found to be 0.215. (Table 3) Most of the participants working in their centres has separate wards for COVID and Non-COVID patients, i.e 48/61 (78.7%). Among them practicing microsurgery during this pandemic to only COVID NEGATIVE patients are 20 plastic surgeons, i.e 20/48 (41.7%) and out of 61 plastic surgeons, 27 of them practice microsurgery in COVID NEGATIVE patients, i.e 27/61 (44.3%). Plastic surgeons practicing microsurgery to both COVID POSITIVE and NEGATIVE patients are 19/61 (31.1%). 14 of 61 plastic surgeons do not practice microsurgery in this pandemic, i.e 14/61 (23%). The Association between centres having separate wards for COVID and non-COVID patients and practicing microsurgery during this pandemic on applying fishers exact test the p-value was found to be 0.884. (Table 4). 48 plastic surgeons screen all their patients visiting emergency ward for COVID symptoms, i.e 48/61 (78.7%). Out of 48 plastic surgeons, 22 of them screen majorly for limb or digit threatening injuries i.e 22/48 (45.8%) and 19 of them screen for all acute injuries, i.e 19/48 (39.6%). Most of the plastic surgeons operated limb or digit threatening injuries on the group of patients without waiting for COVID report during emergency, i.e 30/61 (49.2%) following all acute injuries have been operated on patients without waiting for COVID report during emergency, i.e 21/61 (34.4%). The Association between screening patients for COVID during emergency and group of patients operated without waiting for COVID report during an emergency on applying fishers exact test the p-value was found to be 0.408 (Table 5).

Table 1. Association between hospital recognized as a COVID-19 centre and whether plastic surgeons working in COVID-19 centre

Do plastic surgeons work in COVID-19 center	Hospital recognized COVID-19 center		Total	Fisher's exact (p-value)
	Yes N (%)	No N (%)		
Yes	22 (91.7)	2 (8.3)	24	<0.000*
No	18 (48.6)	19 (51.4)	37	
Total	**40 (65.6)**	**21 (34.4)**	**61**	

**Significant at 5% level of significance*

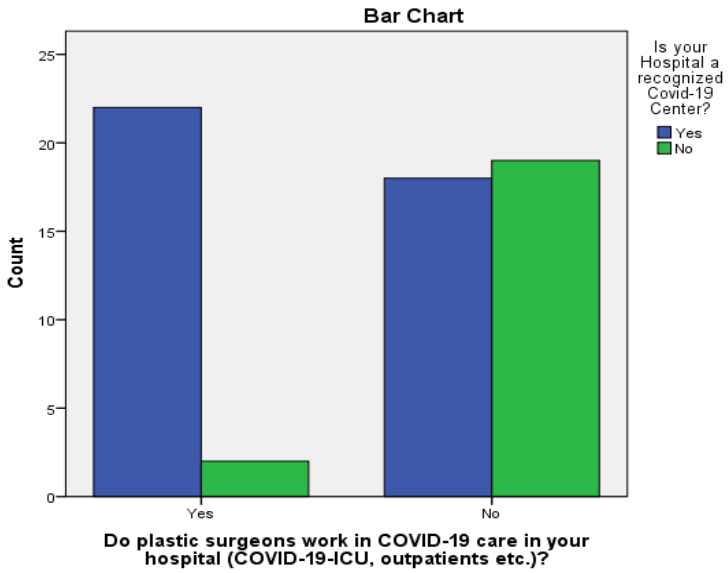

Fig. 1.

Table 2. Association between the number of COVID-19 patients currently treated in your hospital and whether plastic surgeons working in COVID-19 centre

Number of COVID-19 patients currently treated in your hospital	Do plastic surgeons work in COVID-19 center		Total	Fisher's exact (p-value)
	Yes N (%)	No N (%)		
<50	3 (50.0)	3 (50.0)	6	<0.000*
50-100	2 (50.0)	2 (50.0)	4	
>100	18 (58.1)	13 (41.9)	31	
Non-COVID setup	1 (5.0)	19 (95.0)	20	
Total	**24 (39.3)**	**37 (60.7)**	**61**	

**Significant at 5% level of significance*

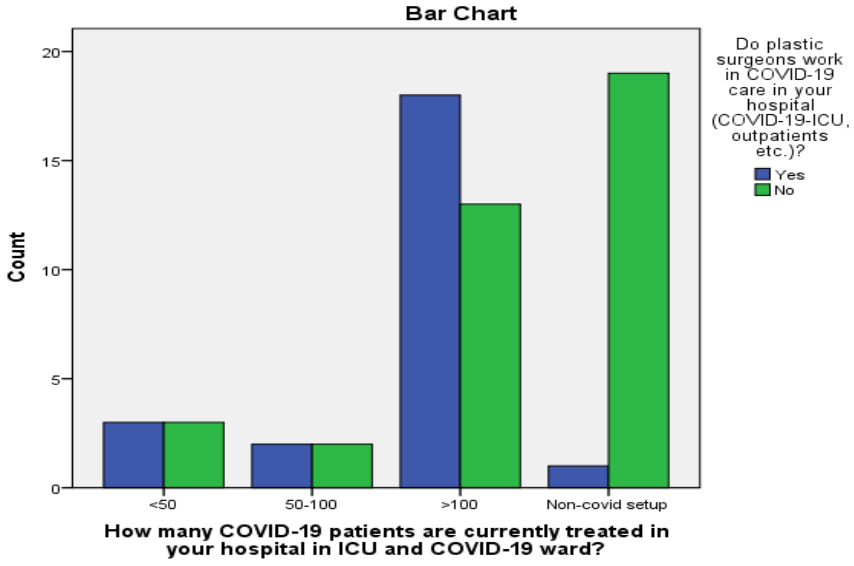

Fig. 2.

Table 3. Association between centre having separate wards for COVID and non-COVID patients and whether plastic surgeons working in COVID-19 centre

Whether center has separate wards for COVID and non-COVID patients	Do plastic surgeons work in COVID-19 center		Total	Fisher's exact (p-value)
	Yes N (%)	No N (%)		
Yes	21 (43.8)	27 (56.3)	48	0.215
No	3 (23.1)	10 (76.9)	13	
Total	**24 (39.3)**	**37 (60.7)**	**61**	

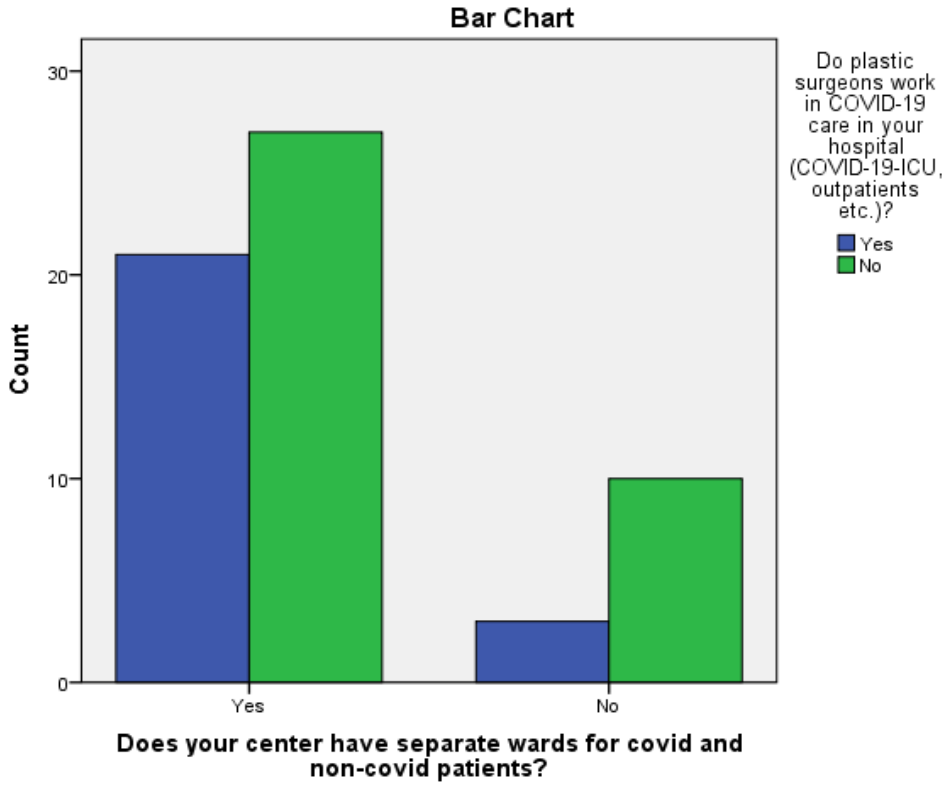

Fig. 3.

Table 4. Association between centre having separate wards for COVID and non-COVID patients and practicing microsurgery during this pandemic

Whether center has separate wards for COVID and non-COVID patients	Practicing microsurgery during this pandemic				Total	Fisher's exact (p-value)
	Yes, COVID +ve& –ve patients N (%)	Only COVID – ve patients N (%)	No N (%)	NA N (%)		
Yes	16 (33.3)	20 (41.7)	11 (22.9)	1 (2.1)	48	0.884
No	3 (23.1)	7 (53.8)	3 (23.1)	0 (0.0)	13	
Total	**19 (31.1)**	**27 (44.3)**	**14 (23.0)**	**1 (1.6)**	**61**	

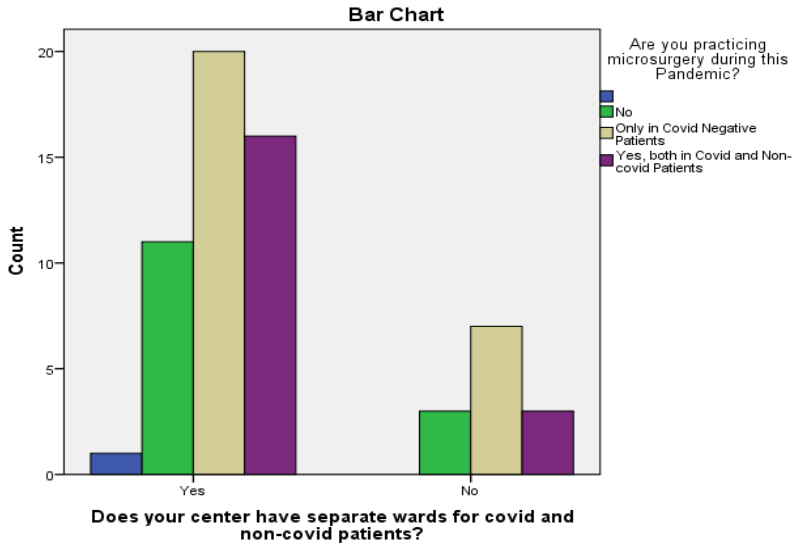

Fig. 4.

Table 5. Association between screening patients for COVID during emergency and group of patients operated without waiting for COVID report during emergency

Screening patients for COVID during emergency	Group of patients operated without waiting for COVID report during emergency					Total	Fisher's exact (p-value)
	All acute injuries N(%)	Operate necessary patients N (%)	Lim/digit threatening N (%)	Operate after testing N (%)	Not applicable N (%)		
Yes	19 (39.6)	1 (2.1)	22 (45.8)	2 (4.2)	4 (8.3)	48	0.408
No	2 (15.4)	0 (0.0)	8 (61.5)	1 (7.7)	2 (15.4)	13	
Total	**21 (34.4)**	**1 (1.6)**	**30 (49.2)**	**3 (4.9)**	**6 (9.8)**	**61**	

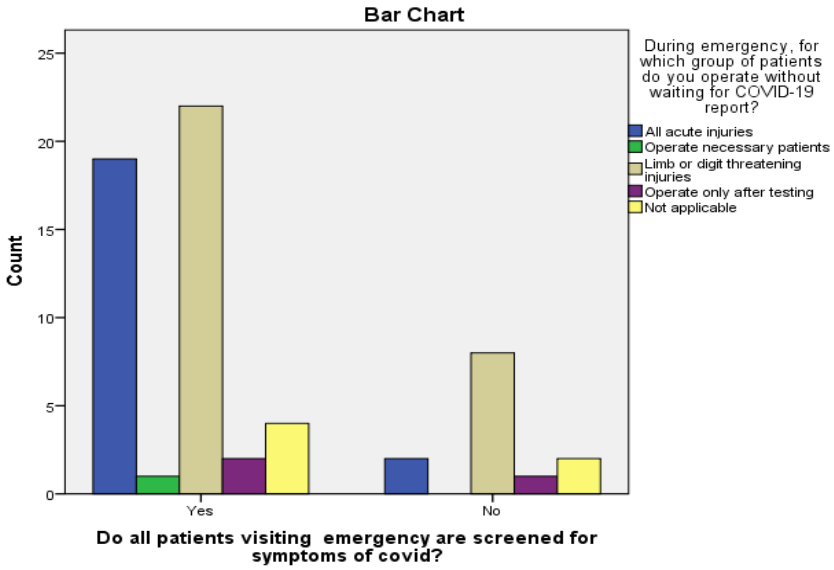

Fig. 5. Pie-chart showing number of COVID-19 patients currently treated in the hospital

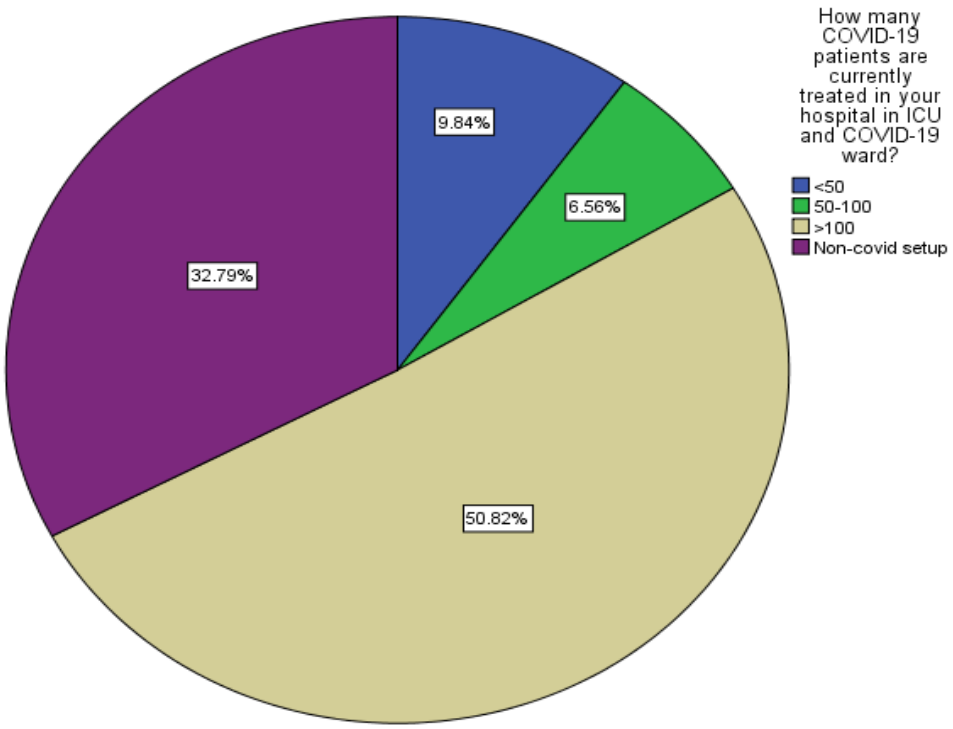

Fig. 6. Pie-charts showing the turn-around-time for COVID-test currently in the hospital

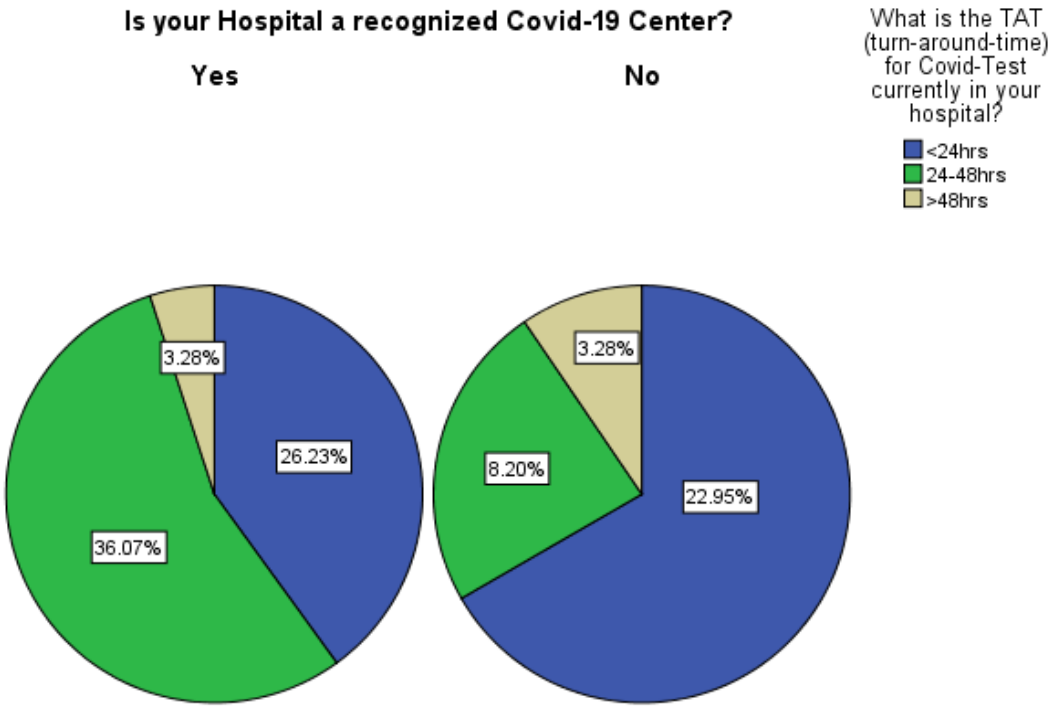

Fig. 7. Bar chart showing how plastic surgeons are rotated for non-COVID duty during this pandemic

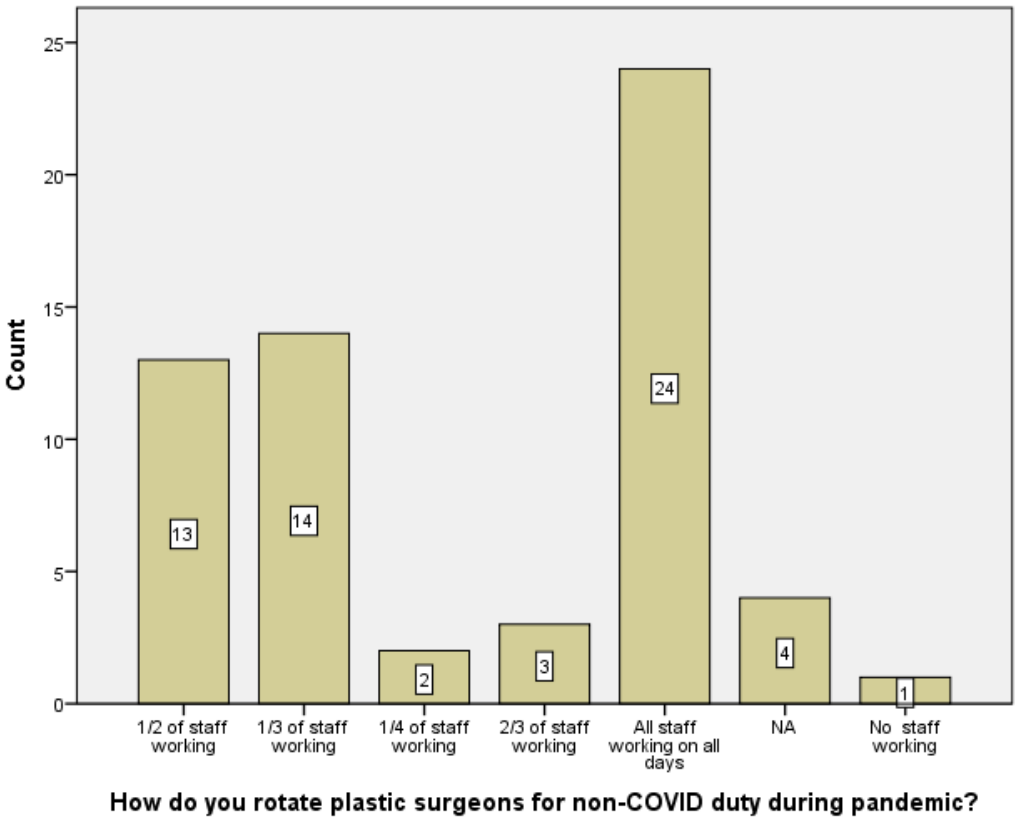

Fig. 8.

4. DISCUSSION

The COVID-19 pandemic has led the health care centre across the country to modify the way health care is being delivered. It became clear that the only option to prevent the rapid spread of COVID-19 and the impending oversaturation of medical resources was to adhere to the government's strict social-distance orders. After the commencement of nationwide lockdown, it is important to study the effect on patients still requiring visits to the emergency room and intervention.. There were responses from 61 plastic surgeons across various hospitals in India. There are more than 100 COVID-19 patients are being treated in their respective hospitals in ICU and Covid ward according to 31 plastic surgeons out of 61 who took part in this study. This is in line with Gunta R et al., who reported 121 patients in Sweden and 114 patients in Estonia [1]. In this study most of the plastic surgeons do not work in COVID-19 ward (60.7%). This is in accordance with Dash et al [2]. Most of the hospitals across the country have separate wards for COVID and non COVID patients. This is in line with almost all the hospitals across the world [5,6]. In this study, it is reported to be 78.7%. The remaining 20% has not been established as a COVID-19 treating centre. In this study, 41% undergo covid testing before admission and 34.4% undergo covid testing after admission [7] This is in contrast with the study of Gunta R et al., in countries of Ireland, Sweden and Austria where the patients are tested only with symptoms whereas all other countries that took part in that study undergo covid testing for all the patients [1]. As Covid infection can spread easily in a closed environment it is necessary to have separate operating theatres for covid and non covid patients. It is essential for all of us to adapt to the current situation where meeting person to person is a sin. In this study, 44.3% of plastic surgeons practice microsurgery only in COVID-19 negative patients and 23% do not practice microsurgery in this pandemic. This is in contrast with Benjamin A. Sarac et al. [8]. where only less than 10% plastic surgeons are practicing microsurgery [9].

We highlighted this as a public issue and following government orders making necessary precautions.

5. CONCLUSION

The present study shows the changes in the plastic surgery department and restrictions due to COVID-19 pandemic. As plastic surgeons, we believe that, it is of most importance that we, as responsible doctors, work to limit the transmission of viruses and free up the resources to treat patients who are seriously ill with the disease. Plastic surgeons should be kept up to date and informed on the latest information and techniques for treating this problem, as well as infection prevention and control. As such, we underline the importance of ongoing education by substitute means and encourage trainers and trainees to come together and discuss how the attainment of surgical skills can be ensured. Furthermore, through our communications, we must enthusiastically participate in the discussion on the proposal of criteria and regulations to ensure the care of patients with COVID-19, and in the development of exit strategies for surgery as a whole, and in particular, our specialist area. Using online lectures and webinars to continue education for young plastic surgery trainees is beneficial during this time.

CONSENT AND ETHICAL APPROVAL

The IRB of Saveetha Medical College and Hospital was sought for ethical approval. Informed consent was taken from respondent's.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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