Plastic Surgery and COVID-19 in the GCC: Fears, Lessons Learned, and the Plan for the Future

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Background: With the labeling of Coronavirus Disease 2019 (COVID-19) as a pandemic by the World Health Organization, national directives were issued instructing to close all cosmetic clinics, suspend all cosmetic procedures, and only operate on an emergency basis. As a result, many plastic surgeons faced challenges sustaining their practice. We aimed to investigate the effect of these national directive instructions on the surgeons and to review their strategies for adapting their practices during this new pandemic.

Methods: A cross-sectional descriptive study was conducted using an online questionnaire. It was constructed to assess the attitudes and practices of plastic surgeons in the Gulf Cooperation Council countries during the COVID-19 lockdown. It also explored their strategies on reopening their practice, as well as their plans on modifications of practice during and after the lockdown.

Results: In total, 197 surgeons responded to the survey. The majority were from Saudi Arabia (42.1%), followed by the United Arab Emirates (37.6%), with relatively smaller participation from the remaining countries. Over two-thirds (69.5%) indicated that the pandemic had affected their practice. Surgeons in private practices were significantly affected ($P < 0.001$) compared with those in the public sector. Only 39% of respondents mentioned COVID-19 testing as part of their post-pandemic surgical protocol.

Conclusions: Surgeons’ responses to the pandemic varied. Fear and future uncertainty significantly led to a surge in the utilization of different technical means to maintain the patient pool. Surgeons’ education about post-pandemic precautions is essential to maintain high standards of care in the region. (Plast Reconstr Surg Glob Open 2020;8:e3225; doi: 10.1097/GOX.000000000003225; Published online 30 September 2020.)

INTRODUCTION

In December 2019, a novel virus outbreak spread from Wuhan, China, to the rest of the world. This virus was named the new coronavirus (COVID-19) by the World Health Organization on January 7, 2020.¹ It was labeled as a pandemic by the World Health Organization on March 11, 2020.² It has changed all aspects of life as we know it, including medical practice. Internationally and locally, governments and health authorities have imposed strict quarantine and preventive measures to minimize the spread of the virus. In Saudi Arabia, health regulators implemented many mitigations at the levels of communities, health centers, and workplaces. Social distancing, closure of schools, suspension of gatherings, suspension of air travel, and active screening of crowded areas were some of the measures implemented by the government to prevent and limit the spread of the novel coronavirus.¹

Different Gulf Cooperation Council (GCC) countries were no exception with regard to the COVID-19 pandemic. By mid May 2020, the total number of COVID-19-positive patients had reached just over 73,000 cases collectively. Before that, on March 20, 2020, the Saudi Ministry of Health issued a directive to all hospitals and dental/cosmetic clinics to close and only operate on an emergency basis. As a result, many plastic surgeons faced challenges sustaining their practice. We aimed to investigate the effect of these national directive instructions on the surgeons and to review their strategies for adapting their practices during this new pandemic.

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emergency basis. Nonsurgical and surgical cosmetic procedures were also suspended. Other GCC countries, such as the United Arab Emirates, Kuwait, Oman, and Bahrain, issued similar directives at the same time. These directives were all designed to minimize elective hospital visits to vacate beds for possible COVID-19 patients and to protect patients from unnecessary risks of exposure.

During this time, many plastic surgeons around the world faced similar circumstances. These challenges led to many innovative ideas and created ways to maintain patient care. Telemedicine was utilized for communicating with follow-up patients and evaluating new referrals. Many medical conferences and international meetings were canceled, and instead, webinars were initiated by different international and local societies, all aiming to maintain surgeons’ education and knowledge sharing. Resident training and education were also maintained with the use of various online materials and alternative training methods.

In this study, we investigated the attitudes and practices of plastic surgeons in different GCC countries during the COVID-19 lockdown, along with their ideas on the resumption of their practices after the pandemic. We also evaluated their thoughts and attitudes on standards of clinical and preventive practices during and after the lockdown.

METHODOLOGY

This was a cross-sectional internet-based study distributed to board-certified Plastic and Reconstructive Surgeons practicing in different GCC countries over a period of 2 weeks that started on April 29, 2020. A 39-item questionnaire was developed in English by a panel of content experts in the field of plastic surgery. It was further validated and consequently remarked by expert opinions that reflected good reliability and internal consistency of items presented. The questionnaire was developed and launched using SurveyMonkey as the platform, a secure internet-based survey development tool. After obtaining ethical approval through the Institutional Review Board at King Saud University Medical City, the questionnaire was submitted through emails and electronic messaging services to all registered surgeons in the GCC region. Informed consent to participate in the survey was obtained before starting the questionnaire. Data collection was random and anonymous. The method of distribution ensured that researchers were blinded to whether or not any individual participant received or filled out the questionnaire. Duplication of responses was prevented by blocking the repeated IP address of respondents. The questionnaire included information related to the demographic data of the participants and the nature of their practice. It also explored the effect of the COVID-19 pandemic on their practice, socioeconomic impact, and emotional concerns.

STATISTICAL ANALYSIS

Data analysis was done using the Statistical Package for Social Studies (SPSS 22). The Descriptive data were expressed as percentages. Pearson correlation coefficient was performed to assess correlations between variables. A χ² test was used for significant correlations for categorical variables. Cronbach’s alpha test was used to assess the reliability and internal consistency of the items in the questionnaire. P < 0.05 was considered statistically significant.

RESULTS

The survey was submitted to a total of 501 plastic surgeons in the GCC countries. A total of 238 surgeons responded to the survey, with a response rate of 47.5%. Of those, 41 responses were excluded from the analysis (18 were from non-GCC countries and 23 had no responses to the questions). This yielded a total of 197 responses that were included in the final analysis. The majority of the respondents were from Saudi Arabia (42.1%), followed by the United Arab Emirates (37.6%), with relatively smaller participation from the remaining GCC countries, as shown in Figure 1. Nearly two-thirds (64.5%) of the respondents were senior plastic surgeons with more than 10 years of experience, while 20.8% have been practicing for about 5–9 years, and only 14.7% have been in practice for 4 years or less. Almost half of the respondents (47.2%) practice exclusively in the private sector, while 30.5% have a mixed private and public practice, and 22.3% practice only in the public sector.

When asked about the type of lockdown in their country, all GCC countries implemented some degree of lockdown, in which 36% had a full lockdown, while 62.4% had a partial lockdown. This lockdown was also coupled with restrictions on different plastic surgery procedures, whether cosmetic or reconstructive, with the former being affected to a more substantial degree (92.9%). Additionally, further restrictions were implemented on minor procedures and reconstructive interventions, as reported by 72.1% and 37.1% of respondents, respectively. Most of the surgeons (83.2%) were prevented from performing elective cases, and only 13.7% were allowed to perform some elective cases with precautions.

Over two-thirds (69.5%) of the surveyed surgeons indicated that the pandemic had affected their practice. This was correlated to different countries of origin and showed that Saudi surgeons were affected the most, while Bahraini surgeons were the least affected with statistical significance (P < 0.001). Further analysis has shown that senior surgeons felt that their practice was affected by the pandemic, which was statistically significant when compared with those who had fewer years of experience (P = 0.012). Additionally, surgeons in private practice were significantly affected as opposed to those in the public sector, with P < 0.001. When asked about the different ways to sustain their private practice after the pandemic, the majority of surgeons (45.7%) responded that they focused on communicating with their patient pool to arrange future appointments. Others considered different means of financial rearrangement and social media advertisements, as summarized in Figure 2, with a significant association when compared with those who practice in the public sector (P < 0.001).
Surgeons were also asked about their primary focus during the lockdown, and the majority focused on self-education (89.3%) followed by online consultations and research activities (54.8% and 51.8%, respectively), as summarized in Figure 3. When asked about their different feelings during this pandemic, half of the participants (50.8%) felt frustrated that they could not operate, and 45.7% were worried about the loss of financial security. Interestingly, despite the negative impact of the pandemic, 77.2% appreciated the extra time spent with family. The results of different attitude responses are summarized in Figures 4, 5.

Furthermore, we asked surgeons about their expectations in resuming practice after the pandemic is over.

Fig. 1. Pie diagram summarizing the percentages (%) of survey respondents with regard to their country of origin.

Fig. 2. Bar chart summarizing the different means implemented to sustain private practice after the pandemic is over. Numbers represent percentages (%).
The majority believed that patients would start visiting the clinic immediately (42.6%). Moreover, the majority of surgeons intend to resume nonsurgical cases (50.3%) and reconstructive cases (46.7%) promptly, compared with other types of interventions. Interestingly, surgeons with >10 years of experience considered going back to practice right away, which is significantly earlier than junior surgeons ($P = 0.022$). Saudi surgeons were keen to resume both cosmetic and reconstructive cases at once (52.5% and 54.3%, respectively), which was significantly higher than other GCC countries ($P = 0.026$ and $P = 0.027$, respectively). The results of other GCC countries showed that they would resume such interventions 1 month after the pandemic resolution.

Additionally, surgeons were asked for their thoughts on patients’ perception of cosmetic surgery after the pandemic. It showed that 38.6% of the respondents believed that patients would request a drop in the cost of cosmetic surgeries, whereas 26% believed that patients would expect comprehensive medical precautions (Fig. 6).

Also, when asked about what will lead the patient to trust the facility, most respondents (83.8%) replied that implementing strict staff personal protective equipment (PPE) was the most important factor. Notably, it was found that 78.3% of Saudi surgeons believed that having patients’ temperature checked at the entrance was more important than testing for COVID-19 before a surgical procedure.

When surgeons were asked what changes they would implement in their practice after the pandemic is over, only 39% of the respondents mentioned COVID-19 testing as a part of their post-pandemic surgical protocol, while most respondents (56.9%) believed wearing masks for every procedure in all patient encounters was all that is needed (Fig. 7).

Finally, we found a difference in how surgeons would relaunch their practice after the pandemic. Starting with nonsurgical procedures was the most common response (62.4%), in addition to limiting the number of patients seen (49.7%), offering promotions and discounts (32.5%), as well as social media advertisements (34.5%).

**DISCUSSION**

Medical practice has been affected by COVID-19 pandemic worldwide. Because of its rapid global spread, many countries have enforced measures to reduce elective medical care during the pandemic, whether surgical or nonsurgical procedures. Results of such measures permitted the vacating of general ward and ICU beds as well as releasing surgeons, anesthetists, and nursing staff to be free when needed. These mitigating measures created a backlog, delay in clinic scheduling, and rebooking of elective procedures. In Saudi Arabia, health regulators implemented various interventions at different levels. Social distancing, closure of schools, suspension of weddings, funerals, events, religious gatherings, air traffic, and governmental and private agencies were some of the measures applied by the government to prevent and limit the spread of the virus. The Ministry of Health also closed all cosmetic centers and suspended all cosmetic procedures, whether surgical, nonsurgical, and laser treatments, on March 20, 2020. Many GCC countries, such as the United Arab Emirates, Kuwait, Oman, and Bahrain, followed suit and issued similar directives in the same time period. Internationally, many recommendations
regarding operating on elective procedures during and after the pandemic were published.16–18 The American College of Surgeons advised that a day-by-day, data-driven assessment of the changing risk–benefit analysis will be needed to directly tailor care provided to patients.17 The American Society of Plastic Surgeons advised many surgeons and institutions to abide by local health regulations and monitor the situation in their respective communities.

Fig. 4. Bar chart summarizing the different positive attitude responses implemented by surgeons during the COVID-19 pandemic. Numbers represent percentages (%).

Fig. 5. Bar chart summarizing the different negative attitude responses implemented by surgeons during the COVID-19 pandemic. Numbers represent percentages (%).
before returning to work. Advice such as social distancing, regular cleaning, availability of PPE, and antiseptic supplies was recommended on the resumption of work. Polymerase chain reaction testing was advised preoperatively, along with self-isolation of 5–7 days preprocedure. It is worth mentioning that many states and governments have issued certain recommendations. However, many of such were not clear on how plastic surgeons should approach elective surgeries. It was recommended that surgeons were to operate, under the jurisdiction of appropriate law in their respective countries, keeping in mind the importance of individualizing patient care and resources. The International Society of Aesthetic and Plastic Surgery also posted recommendations to help guide surgeons during and after the pandemic. The post-pandemic era was divided into early and late phases based on the COVID-19 peak in the respective country. National societies have recommended completely halting any elective non-life-threatening procedures during the pandemic. Only emergency and cancer-related, reconstructive procedures were advised to be continued, with strict adherence to PPE as well as patient and physician safety. Strict abidance to these rules showed a potentially favorable outcome from different international institutes. One example from Italy is a plastic surgery unit that managed to perform 256 surgical procedures, 1581 outpatient office visits, 58 plastic surgery consultations, and >40 burn cases during 1 month of the pandemic. All surgeons, nurses, and staff swabbed for COVID-19 were negative except for one. This was attributed to minimizing elective procedures and strict adherence to PPE and hand hygiene.

In our population, most of the surgeons were from Saudi Arabia (42.1%), followed by the United Arab Emirates (37.6%), with relatively smaller participation from the remaining countries. One-third had a mixed practice, and senior surgeons comprised almost half of our population. We found that most of our surgeons were prevented by the lockdown to perform any elective surgeries. Saudi surgeons were affected the most, while Bahraini surgeons were the least with statistical significance ($P < 0.001$). This may be explained by the significantly larger population of Saudi Arabia and its number of practicing plastic surgeons. Although it would be expected that senior surgeons would be more confident in such situations, we found that they felt that their practice was affected by the pandemic, which was statistically significant when compared with those who had fewer years of experience ($P = 0.012$). This may be attributed, in part, to the fact that the pandemic is new to everyone, and that surgeons were not able to rely on their experiences to

Fig. 6. Pie diagram summarizing surgeons’ opinions related to patients’ perception about cosmetic surgery after the pandemic resolution. Numbers represent percentages (%).
solve such a situation. Additionally, as expected, surgeons in private practice were significantly affected ($P < 0.001$) as opposed to those in the public sector.

In light of the rules of many health authorities in the region, a considerable debate emerged on the patterns of response and behavior from surgeons toward this pandemic and their practice during and after its resolution. Ducournau et al.\(^\text{24}\) surveyed 47 hand surgeons in 37 countries, asking them about their practices during the pandemic. They showed that the measures were taken by all the different hand surgeons in their group to protect themselves, and their patients were not homogeneous.\(^\text{24}\) Craniofacial surgeons were also encouraged to enforce general recommendations and guidelines for pediatric craniofacial surgery, which is usually time sensitive. They were additionally advised to weigh benefits and risks in light of patient age, and condition with respect to the local laws at the time of the pandemic.\(^\text{25}\) However, despite the surgeons’ efforts to overcome the challenges in the best possible manner, some major concerns still remain. Bentz\(^\text{26}\) listed 20 steps to follow if a surgeon was deemed positive for COVID-19. His advice ranged from self-care advice, financial care, and planning for family care in case the worst occurred. Additionally, surgeons from Italy have reported concerns of uncertainty and fear of the unknown. This was mainly due to unpredictable outcomes, lack of treatment, limited availability of PPEs, and unclear futures of the practice of plastic surgery.\(^\text{27}\)

In our population, the pandemic, undoubtedly, affected the attitudes of surgeons. Half the participants (50.8%) felt frustrated that they could not operate, and 45.7% were worried about the loss of financial security. However, the pandemic positively affected most of the surgeons by allowing them extra time spent with their families (77.2%). Planning for the resumption of work after the pandemic ends is crucial. As the pandemic unfolds, recommendations of practice continue to change. Many international societies like the American Society of Plastic Surgeons, as well as local societies, proposed a consent form to be added to routine elective procedures. The goal is to augment patient awareness and information before surgery in regard to the risks that they may face during elective procedures.\(^\text{28,29}\) Perhaps the most striking aspect is that GCC surgeons’ actions were invested toward maintaining their patient pool. The majority of surgeons (45.7%) arranged future appointments after the pandemic. Additionally, surgeons in private practice considered different means of financial rearrangement and social media advertisement with significant association when compared with those who practice in the public sector ($P < 0.001$). The majority felt that patients would start to visit clinics immediately after the pandemic is over (42.6%). More than half of the surgeons intended to resume nonsurgical cases immediately after the pandemic. Interestingly, senior surgeons with >10 years’ experience considered going back to practice immediately, and that was significantly earlier than that of surgeons having fewer years of experience ($P = 0.022$). Interestingly, Saudi surgeons were keen to resume both cosmetic and reconstructive cases immediately after the pandemic is over. This was significantly different from other GCC countries, which showed they would resume such interventions 1-month post-pandemic resolution. Clinic relaunch was also affected and showed that most would gradually relaunch their practice and use specific measures, such as starting with nonsurgical procedures, limiting the number of patients during the initial phase, offering promotions and discounts, as well social media advertisements. Relaunching clinics needs revisiting of precautionary measures to ensure high standards of

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**Fig. 7.** Bar chart showing what changes surgeons would implement in their practice after the resolution of the pandemic. Numbers represent percentages (%).
care to protect ourselves, staff, and patients. All participating surgeons were aware of the need for implementing precautionary measures. Moreover, when surgeons were asked about what changes they would implement in their practice after the pandemic is over, only 39% of respondents mentioned COVID-19 testing as part of their post-pandemic surgical protocol. This leads to the need for further education on the COVID-19 precautionary measures and its effects on postoperative patients.

The pandemic has affected everyone in the world. Plastic surgery patients and surgeons were no exception. Surgeons were asked for their different thoughts on patients’ perception of cosmetic surgery after the pandemic. Price drops and comprehensive medical precautions were the highest at (38.6%) and (26%), respectively. Implementing strict staff adherence to PPEs was the most important factor thought by surgeons to attribute to increased patients’ trust in the facility after the pandemic (83.8%).

During the shutdown, many surgeons around the globe have become innovative in fields related to plastic surgery. Resident education, which may have been affected by the decreased load of elective cases, was augmented by practices such as daily briefings, simulation models, integrating information technology, and nationally integrated didactics. Many institutes created guidelines encouraging program directors to utilize online education and to organize schedules to minimize the presence and unnecessary exposure to suspected COVID-19 patients without compromising patient care. Another area for innovation was the focus of surgeons on patient education, telemedicine, and publicity via social media. Telemedicine existed before the COVID-19 pandemic. However, its use was limited to situations where either the patient or physician was not in close proximity or for consultations between healthcare professionals in different locations of the globe. Many applications were adapted to allow and expand telemedical services while maintaining patient privacy. In some centers, additional codes and consents were added to accommodate the special situation of online consultations during the COVID-19 pandemic. The education of physicians was also encouraged during the lockdown. The use of available online resources was maximized to make that possible. Many medical conferences were canceled, whereas webinars were initiated by many international and local societies. Since online learning and online consultations became a large part of a surgeon’s job in the pandemic era, the majority of our population stressed the importance of self-education (89.3%) followed by online consultations and research activities (54.8% and 51.8%, respectively). Telemedicine and its applications were also widely used in the region, and its scope during the pandemic is beyond the limit of this article.

CONCLUSIONS

With the rapid spread of the COVID-19 pandemic, different actions were implemented by various healthcare authorities, all aiming to limit unnecessary exposure, slow the virus’s spread, and ensure proper utilization of healthcare facilities. The limitations and ban on aesthetic procedures clearly affected plastic surgeons around the globe. We have surveyed 197 surgeons from different GCC countries and shown that surgeons in private practices were more affected than their colleagues in the public sector, as reflected in their feelings of fear and uncertainty. Additionally, surgeons were keen on self-education and utilizing cutting-edge technology at this time of necessity to overcome the challenges associated with the pandemic. We saw a surge in business reorganization, as well as the creative utilization of social media and telemedicine. The lessons learned during this time clearly reflect the need for further understanding of business development, contingency plans, and crisis management. When assessing surgeons’ current knowledge and practices related to COVID-19 patient-specific precautions, further education and awareness are needed to maintain a high standard of care and prevent potential complications.

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