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ORIGINAL ARTICLE
Global Health

Public Confidence for Undergoing Elective Plastic Surgery Procedures during the COVID-19 Pandemic

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Background: The COVID-19 vaccine rollout has since been followed by a gradual resumption of elective surgery. Many individuals remain cautious about visiting a hospital or clinic to undergo surgery. As plastic surgeons are starting to resume elective surgery at this time, it is important to understand the perspectives of potential patients and the concerns they may have.
Methods: A survey was distributed to participants in the United States through Amazon's Mechanical Turk (mTurk) during March of 2021. Participants were surveyed regarding their views on the severity of COVID-19, vaccination status, and how much COVID-19 has affected their interest in undergoing surgery.
Results: Thirty-nine percent of respondents were either no longer willing or less willing to undergo elective plastic surgery. Seventy-three percent of respondents felt comfortable going to an office for a consultation. With regards to feeling comfortable visiting a hospital, 43.4% reported they would feel safe, 36% felt they would feel safe only if they could be discharged on the same day, and 30.6% reported not feeling safe. Fifty-two percent of respondents reported feeling comfortable undergoing surgery now or within the next year. Respondents who do not think COVID-19 is still a major health issue were more likely to still want plastic surgery.
Conclusion: The results of this study highlight that the majority of patients, regardless of vaccination status, currently feel comfortable undergoing elective plastic surgery, particularly in an office setting. Plastic surgeons may expect to see a return in demand for elective procedures in the coming months. *(Plast Reconstr Surg Glob Open 2022;10:e4522; doi: 10.1097/GOX.0000000000004522; Published online 24 August 2022.)*

INTRODUCTION

The COVID-19 global pandemic precipitated abrupt restrictions in the daily lives of the public, justly causing a new wariness in regard to elective surgical procedures. Apprehensions were magnified after the Centers for Disease Control and Prevention (CDC), American College of Surgeons (ACS), American Society of Plastic Surgeons (ASPS) and multiple State and Federal jurisdictions recommended delaying nonurgent surgery to allocate resources to the treatment of COVID-19 patients.[1–4] Millions of elective procedures were postponed, raising concern for neglected chronic disease and health maintenance.[5] The US healthcare system sustained a net loss of $300 billion as a direct result of the mandated suspension.[6]

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Received for publication February 28, 2022; accepted July 19, 2022.

DOI: 10.1097/GOX.0000000000004522

The ACS guidelines for reinstating elective surgery were based on a sustained reduction in new cases, sufficient hospital resources, available testing, and the ability to provide high-quality care.[7]

The progressive resumption of elective surgery was largely aided by the distribution of the first FDA-emergency authorized coronavirus vaccine.[8,9] Seven months following the vaccine release, approximately 50% of the US population was fully vaccinated.[10] Surgeons and patients alike were eager to regain a semblance of normalcy, although patient safety and security had to be ensured. Vanni et al[11] found that the concern for COVID-19 infection elicited significant patient anxiety in cancer patients and represented the most common reason for the refusal of surgical interventions. However, a survey of 1000 Americans found that over 85% of participants approved of the resumption of elective surgery, despite their concerns for potentially contracting the virus.[12] Significant contributions have been made to the scientific literature during this time

Disclosure: *The authors have no financial interest to declare in relation to the content of this article.*

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which outline guidelines for safe practice during these unprecedented times.[13,14]

As the public health landscape fluctuates with vaccine distribution and regional resurgences, it is important to understand the evolution of patient perspective. The aim of this study was to identify and understand the public sentiment of having elective plastic surgery during the COVID-19 pandemic since the release of the vaccine. Understanding patient views may help to guide communication, education, and medical decision-making in the evolving time of the COVID-19 pandemic.

METHODS

The study was approved by our institutional review board (IRB), protocol 2020P001055. Survey items were developed by collating concerns among surgeons in our department, as well as those communicated by patients during the COVID-19 pandemic. An anonymous survey was created utilizing REDCap. It was distributed with Amazon's Mechanical Turk (mTurk) website in March of 2021. The US citizens 18 years of age and older and those who had considered undergoing elective plastic surgery within the last 3 years were included. The survey was pretested among the staff in our research group to ensure clear and concise questions that captured the concerns expressed in the literature.

Participants were surveyed regarding their desired treatment, vaccination status, and comfort level during the in-office consultation. Questions included one's personal outlook on the pandemic severity, impact on the desire for surgery, and preferred surgical setting (ie, hospital versus offsite). (**See appendix, Supplemental Digital Content 1**, which displays the **s**urvey questions distributed to participants, **http://links.lww.com/PRSGO/C156**.)

Statistical analysis was performed using IBM SPSS Statistics version 25.0 (IBM Corp., Armonk, N.Y.). Power analysis was conducted using a 95% confidence interval (CI) and 5% margin of error, yielding a recommended sample size of 385 participants. Variables such as age and comfort level undergoing plastic surgery were dichotomized to simplify statistical analysis (eg, age above or below 35, comfortable having surgery within 3 years or not at all). Descriptive statistics including frequencies were used to report continuous and categorical variables. The chi-square test was used to determine differences between categorical variables and to determine odds ratios (ORs) and 95% CI between demographic characteristics and survey responses. A *P* value of less than 0.05 was considered as statistically significant.

RESULTS

A total of 396 participants were included in this study. Sixty-two percent of participants identified as female, 36% as male, and 2% preferred not to answer. A breakdown of gender, age, and geographic location is demonstrated in Table 1. A breakdown of desired treatment area is demonstrated in Table 2. Ninety percent of participants believe COVID-19 to be a major health issue (Fig. 1). The vaccination status of participants is shown in Figure 2. Since the pandemic onset, 14% became more interested in undergoing a procedure, 39% were less or no longer interested, and 48% reported no change (Fig. 3). Seventy-three percent felt safe going to the office for a consultation (Fig. 4). In regard to comfort level with hospital-based surgery, 43% felt safe and 31% did not (Fig. 5). Twenty-six percent of the participants felt comfortable with hospital-based surgery only if they were discharged on the same day (Fig. 5). Thirty-eight percent felt comfortable undergoing an elective procedure at the time of survey, 27% preferred to wait 1 year, 14% preferred waiting 2–3 years, 20% reported an undesignated time of future pandemic stabilization, and 4% felt uncomfortable at any time in the future (Fig. 6).

Takeaways

Question: The aim of this study was to identify and understand the public sentiment of having elective plastic surgery during the COVID-19 pandemic since the release of the vaccine.

Findings: The majority of people believe COVID-19 is a major health issue. However, the majority of patients are willing to visit the office for a consultation and undergo a procedure.

Meaning: Plastic surgeons may expect a return to pre-pandemic volume in the next several years and should discuss COVID-19-related concerns with patients.

Table 1. Respondent Demographics

		N	%
Age, y	18–24	48	12.1
	25–34	159	40.2
	35–44	110	27.8
	45–54	51	12.9
	55–64	23	5.8
	65–74	4	1.0
	75+	1	0.3
Sex	Female	247	62.4
	Male	142	35.9
	Other	3	0.8
	I prefer not to answer	4	1.0
Region	Northeast (N.J., N.Y., Pa, R.I., Conn., Mass., Vt., N.H., Maine)	84	21.2
	South (Md., Del., W.Va., Va., D.C., Ky., Tenn., N.C., S.C., Ga., Ala., Miss., Fla. Ark., La., Okla., Tex.)	149	37.6
	Midwest (Ohio, Mich., Ind., Wis., Ill., Minn., IA, Mo., N.Dak., S.Dak., Neb., Kans.)	72	18.2
	West (Mont., Wyo., CO, N.Mex., Idaho, Utah, Ariz., Wash., Ore., Calif., Nev.)	89	22.5
	Pacific (AK, HI)	2	0.5

Table 2. Treatment Areas Respondents Are Considering for Surgery

Body Part	N
Face/neck	215
Abdomen/midsection	110
Breast	97
Buttocks	32
Arms/legs	43
Other	16

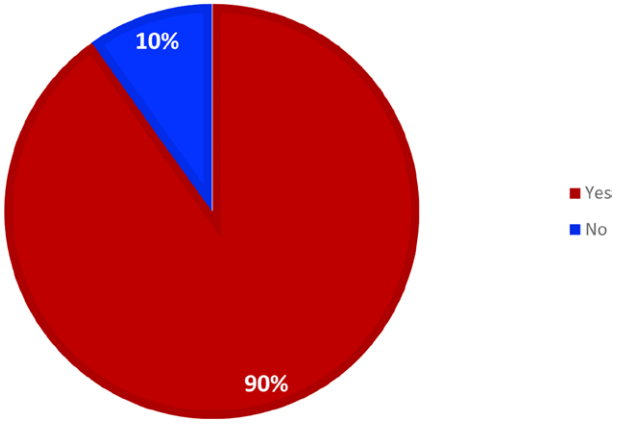

Fig. 1. Respondents who believe that COVID-19 is a major health issue.

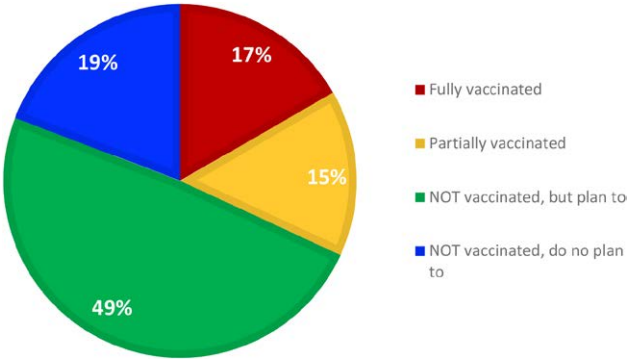

Fig. 2. COVID-19 vaccination status of respondents.

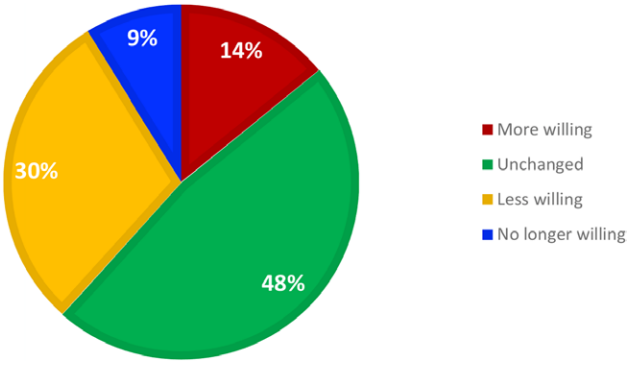

Fig. 3. Willingness of respondents to undergo plastic surgery in light of the COVID-19 pandemic.

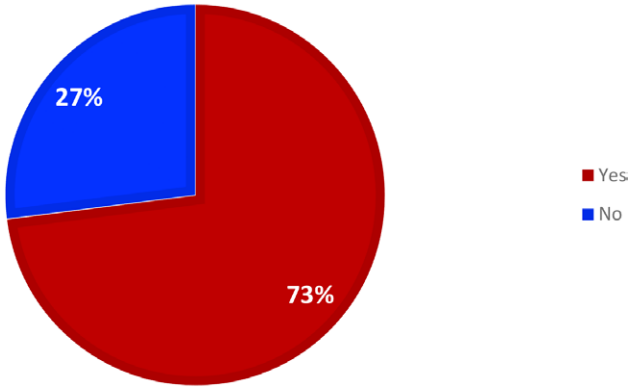

Fig. 4. Respondents indicating they would feel safe going to an office-based appointment or consultation with a plastic surgeon.

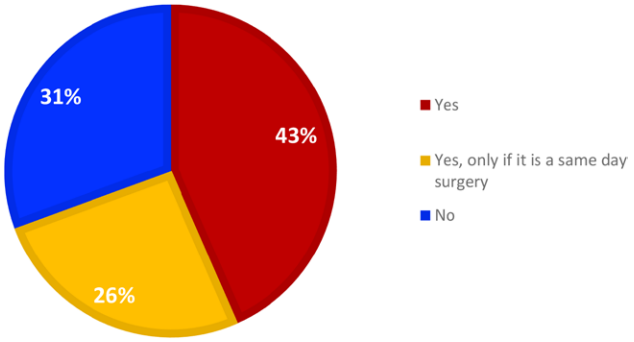

Fig. 5. Respondents indicating they would feel safe going into a hospital for a plastic surgery procedure.

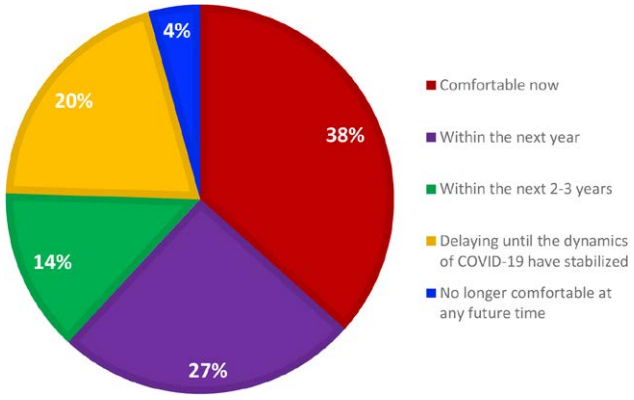

Fig. 6. When respondents would feel comfortable undergoing plastic surgery with regard to COVID-19 safety.

When asked which facility participants would prefer regarding COVID-19 exposure, 23% preferred a large university hospital, 38% preferred a smaller private practice, and 39% had no preference (Fig. 7).

Those who were not vaccinated and did not plan on being so were more likely to still want plastic surgery compared to those who were fully vaccinated, partially vaccinated, or plan on getting vaccinated (OR 2.13, 95% CI 1.21–3.76, $P = 0.008$). Those who did not think COVID-19 was still a major health issue were more likely to still want plastic surgery (OR 3.78, 95% CI 1.54–9.25, $P = 0.002$). Those who did not think COVID-19 was a major health issue were more likely to feel comfortable going to an office appointment (OR 2.73, 95% CI 1.04–7.19, $P = 0.035$). Those who did not think COVID-19 was a major health issue were more likely to feel safe going to a hospital (OR 5.95, 95% CI 1.80–19.72, $P = 0.001$). Those who did not think COVID-19 was a major health issue were more likely to feel comfortable undergoing plastic surgery within the next 3 years compared to those who did think COVID-19 was an issue (OR 14.03, 95% CI 1.90–103.61, $P = 0.001$).

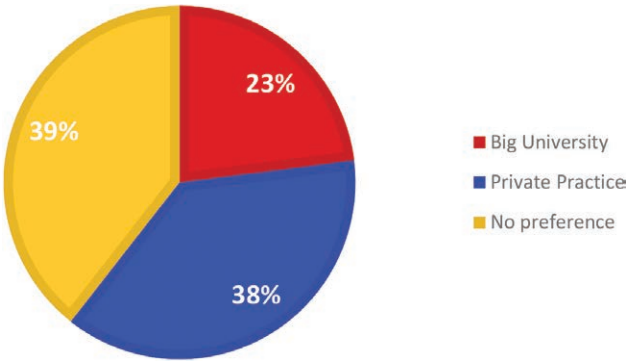

Fig. 7. Type of facility where respondents would currently feel comfortable undergoing plastic surgery with regard to COVID-19 safety.

DISCUSSION

Following the widespread distribution of COVID-19 vaccines, there was a dramatic decline in the associated case numbers, hospitalizations, and patient mortality. As of June 2021, 42.5% of the US population was fully vaccinated and 64% of adults had received at least one dose.[15] The transition into the postvaccination era has been met with a mix of optimism and uncertainty regarding the future of the pandemic. Additionally, patients are presented with a unique situation regarding the return of services that were largely on hold during the past year. With the resumption of elective procedures and office-based consultations, it becomes critically important to gauge the public's perceptions and level of comfort in considering these services. Public opinion regarding the current state of the COVID-19 pandemic and whether the virus still poses a significant personal and public health issue serves as a critical component in determining the level of confidence patients have in considering elective surgery.

We utilized a nationally representative survey to explore public perceptions, concerns, and preferences toward elective plastic surgery. Our study found that the majority of respondents (73%) felt safe attending an office-based consultation. A smaller percentage (43%) felt safe going to the hospital for surgery, with only 26% feeling safe going to the hospital for surgery if they were discharged same day. Our study found that 39% of participants were less willing or no longer willing to undergo plastic surgery and those who do not believe COVID-19 is a major health concern or do not plan to be vaccinated were more likely to still want elective plastic surgery. Thirty-eight percent of respondents felt more comfortable in smaller office-based settings. The remainder had no preference or preferred a larger hospital setting. Men were more likely to prefer a university hospital and unvaccinated participants were more likely to have no preference.

At the height of the first wave of the pandemic (ie, April 2020), which largely affected states in the Northeast, only 21% of individuals were likely to seek hospital care for a non-COVID-19 illness, and only 19% of people were likely to seek specialty care.[16] In May of 2020, another survey reported that 61.1% of participants were concerned with contracting COVID-19 during the perioperative process.[17] In October of 2020, authors found that 67.5% of their survey participants were concerned or very concerned about contracting COVID-19 during elective plastic surgery at an outpatient surgery center, compared to 65.9% in the hospital setting.[12] Comparatively, only 39% of respondents in our study felt less willing to undergo a surgery due to fears of contracting the virus. Furthermore, in October of 2020, 20% of survey respondents felt comfortable undergoing elective plastic surgery. Comparatively, 38% of our respondents felt comfortable undergoing surgery in March of 2021. Taken collectively, there is a trend toward increased confidence in undergoing elective surgery. An increase in the comfort level is likely related to an increased understanding of the viral transmissibility as well as the availability of the vaccine.[18] As opposed to previous surveys, our survey was distributed after the vaccine release, which could certainly play a role in the evolving public perceptions.[19] In addition, the case numbers were declining during the course of our study rather than rising as in previously published studies.[20] Overall, our data suggest that even though most of the public considers COVID-19 to be a serious health issue, most patients feel comfortable undergoing plastic surgery with the stabilizing health climate.

In addition to assessing whether the public is comfortable for undergoing plastic surgery, our study attempted to understand whether patients prefer a particular type of surgical facility. The results were variable, with 23% preferring a large university hospital, 38% preferring a smaller private practice, and 38% had no preference. The findings suggest that there may be utility in discussing the preferred treatment location with patients to optimize the patient experience. Our study did not examine the particular points along the perioperative pathway that raised the greatest concern for a potential viral infection. Prior studies suggested that patients were more concerned during the office check-in, in the waiting room, and through staff interactions, rather than in the operating room.[17] Notably, the vast majority of our participants felt comfortable going to the office for a consultation, indicating a comfort with interacting with staff and face-to-face encounters.

The public opinion regarding the overall significance of COVID-19 has been divided since its emergence. As of June 2021, the polls suggest that approximately 8% of the US population believe COVID-19 no longer poses a significant health risk and that life should proceed without modification.[21] Additionally, there remains distrust and unwillingness to participate in vaccination.[22] Our study identified two interesting relationships relating one's level of concern with surgery, vaccination status, and overall pandemic significance. We found that those who do not view COVID-19 as a major health risk and those who prefer to remain unvaccinated are more likely to pursue plastic surgery. This emphasizes the importance of ensuring that staff and patients are provided with the necessary personal protective gear during patient encounters. Surgeons should counsel patients on the safety precautions taken and thoroughly discuss the risks, benefits, and alternatives of the procedure.

The vast majority of respondents (90%) believe COVID-19 is a major health issue; however, only 39% were

less willing to undergo plastic surgery. This suggests that even though most respondents consider COVID-19 to be a serious health issue, most are willing to accept the risk and undergo plastic surgery.

The financial impact of the pandemic is another essential proponent when evaluating patient interest in elective surgery. The data show that periods of economic decline correlate with a decrease in surgical volume.[23] At least half of households in the four largest US cities reported significant financial distress including exhausted savings, difficulty paying bills, and inability to afford medical care. One of the major implications faced by plastic surgeons during the COVID-19 pandemic stems from the dramatic decrease in case volume and the subsequent financial consequences. The American Hospital Association estimated an average loss of $50.7 billion per month from March 1 to June 30, 2020, largely attributed to the cessation of elective surgical procedures.[24] Plastic surgeons, especially those focusing on cosmetic and elective procedures, have experienced severe operating restrictions and a major drop in revenue as a result.[25,26] Despite a gradual increase in case volume in 2020, plastic surgeons experienced a 55.2% decrease in surgical case volume.[27] This trend was observed among multiple specialties from orthopedics to vascular surgery.[28–30] The impact of financial instability could be a potential factor in the negative response profile. Fortunately, our results demonstrate a rising interest in undergoing elective plastic surgery which may help offset the financial burden caused by the COVID-19 pandemic.

As our data suggest, many patients in the postvaccination era are still uncertain about the prospect of undergoing any elective surgery; however, our study has demonstrated an increased comfort in undergoing plastic surgery since the vaccine rollout. We believe that plastic surgeons should anticipate a return to prepandemic volume in the next several years. Plastic surgeons should spend time counseling surgical patients on the documented risks and benefits of contracting the coronavirus as well as discuss options in preoperative planning to help alleviate anxiety of COVID-19 exposure.

There are limitations to this study. As with any survey, we are limited in the ability to determine disingenuous responses on the MTurk system. Additionally, the system may overrepresent a younger or lower income population. Older individuals or those more susceptible to severe COVID-19 disease may express greater concerns. However, the MTurk system is considered to provide a more generalizable representation than traditional survey methods.[31] The severity and shifting regulations of the pandemic are in constant flux, often secondary to the public disease burden. Therefore, the findings in this study are only representative of public perception at the time of data collection. To achieve an accurate representation of public perception on undergoing elective plastic surgery, the survey needs to be redistributed in the future at multiple timepoints. Last, there is a paucity of published data on public opinion of elective surgery following the recent vaccine release.

CONCLUSIONS

We anticipate a stabilization of the pandemic with the distribution of vaccines and a better understanding of transmissibility. The public perceptions of elective surgery are expected to keep pace given the reported trends. Our findings demonstrate that the majority of people believe COVID-19 is a major health issue. However, the majority of patients are willing to visit the office for a consultation and undergo a procedure. Plastic surgeons should discuss COVID-19 related concerns with patients and incorporate a shared decision-making process. Assessing patient preference for operative venue may be beneficial in optimizing the patient experience.

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