Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

individuals living in an urban environment, with significant baseline disease burden, and who predominately identify as Black and Hispanic. Finally, the sample size was relatively small with 50 participants, which may have left us underpowered to detect statistically significant differences.

The COVID-19 pandemic continues to be an evolving situation with recurrent surges, emerging mutant strains, and varying public health responses world-wide. The effect of these factors on healthcare delivery to patients seeking bariatric surgery and care are difficult to anticipate. While these times prove challenging, more work is needed to assess and maintain the quality of the bariatric process in spite of the difficulties imposed by the pandemic.

Conclusion

Patients pursuing bariatric surgery have had their care postponed and rescheduled due to the risks and constraints presented by the COVID-19 pandemic. Those subject to lockdown restrictions during the pre-operative period have been challenged by difficulty in maintaining healthy nutritional habits as well as physical activity goals, resulting in weight gain – though not to pre-consultation levels. Despite the additional risks posed by the on-going COVID-19 pandemic, patients remain in favor of undergoing bariatric surgery during this period. To enable continued care for this population willing to undergo surgery, communication of risks as well as procedures that will be enacted to minimize their risk with respect to COVID-19 are critical.

Disclosures

Dr. Sarwer currently has grant funding from the National Institute of Diabetes, Digestive, and Kidney Disease (R01-DK-108628-01), National Institute of Dental and Craniofacial Research (R01 DE026603), Department of Defense, as well as the Commonwealth of Pennsylvania (PA CURE). He has consulting relationships with Ethicon and Novo Nordisk. All other authors report no relevant disclosures.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at https://doi.org/10.1016/j.soard.2021.05.026.

References

[1] Hussain A, Mahawar K, Xia Z, Yang W, EL-Hasani S. Obesity and mortality of COVID-19. Meta-analysis. Obes Res Clin Pract 2020;14:295–300.

[2] Rubino F, Cohen RV, Mingrone G, le Roux CW, et al. Bariatric and metabolic surgery during and after the COVID-19 pandemic: DSS recommendations for management of surgical candidates and postoperative patients and prioritisation of access to surgery. Lancet Diabetes Endocrinol 2020;8(7):640–8.

[3] Sarwer DB. Mask wearing and interpersonal interactions. CommonHealth 2020;1(3):153–6. Available from: https://tuljournals.temple.edu/index.php/commonhealth/article/view/422.

[4] Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)-A metadata-driven methodology and workflow process for providing translational research informatics support. J Biomed Inform 2009;42(2):377–81.

[5] Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, et al. The REDCap consortium: building an international community of software platform partners. J Biomed Inform 2019;95:103208.

[6] Likert R. A technique for the measurement of attitudes. Arch Psychol 1932;22(140):55.

[7] Wickham H, Averick M, Bryan J, et al. Welcome to the tidyverse. J Open Source Softw 2019;4(43):1686.

[8] Team R Development Core. R: A language and environment for statistical computing. R Found Stat Comput 2018;2. Available from: https://www.R-project.org. Accessed December 1, 2020.

[9] Pellegrini M, Ponzo V, Rosato R, et al. Changes in weight and nutritional habits in adults with obesity during the "lockdown" period caused by the COVID-19 virus emergency. Nutrients 2020;12(7):2016.

[10] Jayawardena R, Misra A. Balanced diet is a major casualty in COVID-19. Diabetes Metab Syndr 2020;14(5):1085–6.

[11] Baillot A, Vallée CA, Mampuya WM, et al. Effects of a pre-surgery supervised exercise training 1 year after bariatric surgery: a randomized controlled study. Obes Surg 2018;28(4):955–62.

[12] Tabesh MR, Maleklou F, Ejtehadi F, Alizadeh Z. Nutrition, physical activity, and prescription of supplements in pre- and post-bariatric surgery patients: a practical guideline. Obes Surg 2019;29(10):3385–400.

[13] Possmark S, Sellberg F, Willmer M, Tynelius P, Persson M, Berglind D. Accelerometer-measured versus self-reported physical activity levels in women before and up to 48 months after Roux-en-Y gastric bypass. BMC Surg 2020;20(1):1–10.

[14] Youssef A, Cassin SE, Wnuk S, Leung S, Jackson T, Sockalingam S. The impact of COVID-19 pandemic on bariatric patients' self-management post-surgery. Appetite 2021;162:105166.

[15] Johnson K, Hollin I, Palumbo A, Spitzer J, Sarwer DB. An ecologic analysis of comorbidities in patients with COVID-19 in Philadelphia and New York City. CommonHealth 2020;1(3):85–92.

[16] Azar KMJ, Shen Z, Romanelli RJ, et al. Disparities in outcomes among COVID-19 patients in a large health care system in California. Health Aff (Millwood) 2020;39(7):1253–62.

[17] Millett GA, Jones AT, Benkeser D, et al. Assessing differential impacts of COVID-19 on black communities. Ann Epidemiol 2020;47:37–44.

Editorial comment

Comment on: Life during "lockdown": a cautionary tale of the impact of environment on access to bariatric surgery

The COVID-19 pandemic placed a unique spotlight on the many challenges that are encountered when caring for patients suffering from obesity. The preoperative process for bariatric surgery can be resource intensive as it requires numerous visits with health care providers. Given its high barrier to entry, bariatric surgery is not only underutilized,

but also has a high dropout rate despite being the most effective treatment for obesity and associated co-morbidities [1]. During the pandemic, the complexity of navigating the preoperative bariatric surgery process was further exacerbated by 2 major changes in health care delivery. First, health care systems stopped performing nonessential elective procedures such as bariatric surgery, and second, local governments imposed lockdown measures to promote physical distancing and thus prevent further spread of the virus. Patients with obesity were also considered an "at-risk" population, given the potential increase in morbidity and mortality when contracting COVID-19 [2]. As a result, patients were also more likely to avoid in-person interactions with health care providers for fear of being exposed to the virus. To make matters worse, the compounded effect of social and physical isolation increased the risk for maladaptive behaviors, which can result in weight gain [3,4]. While the risks, benefits, and merits of offering bariatric surgery during the pandemic were being debated among providers, health care systems, local governments, and payers, an important perspective was missing: the patient's.

As such, the authors are to be commended for exploring the opinions of patients who were pursuing bariatric surgery during the COVID-19 pandemic. The questionnaire was uniquely insightful for a number of reasons. First, it provided valuable information about how bariatric surgery programs can adapt to their patients' needs. Second, it provided data on a patient's ability to self-reflect on their own behaviors. Third, it offered a glimpse into a patient's commitment to pursuing surgery, even in the face of uncertainty or hypothetically increased risk. Based on their survey questions, the authors found that social and physical isolation can result in significant changes in health behaviors, as patients reported that they were exercising less and snacking more during the lockdown period, despite making appropriate changes after their initial evaluation. Not surprisingly, this resulted in weight gain in 62% of patients. The authors cite that that confinement, decreased psychological well-being, lack of access to a gym, and easier access to shelf-stable or potentially unhealthy foods are potential reasons for their findings and that behavioral maladaptation was more apparent during the lockdown. With this in mind, it is important to recognize, that low-income patients who live with limited resources face the exact same challenges even when there is no pandemic or lockdown mandates in place. Consequently, it comes as no surprise that patients with limited resources are also less likely to progress to surgery [5]. Interestingly, the COVID-19 pandemic provided an opportunity for an entire population to experience a forced environment that can negatively impact health, well-being, and achieving one's weight loss goals. It also serves as a reminder of the importance of recognizing social determinants of health and that discriminatory practices may be disproportionally affecting access to care for bariatric surgery.

Another intriguing finding of this study is that despite potential risks of being exposed to COVID-19, 90% of patients indicated that they preferred to undergo surgery as soon as possible. This indicates a striking level of commitment, which is a quality that is often questioned by payers and providers alike. Although a commitment to lifelong behavioral changes is beneficial to maximizing weight loss outcomes and decreasing recidivism, there is no standardized scientific approach to measuring commitment among bariatric surgery patients. Instead, programs are confined to assessing compliance via monthly in-person visits to discuss weight loss strategies for an arbitrary number of months, often based on insurance coverage. Once again, the COVID-19 pandemic highlighted the difficulty of demonstrating commitment when patients live in an environment with limited access to health care providers, healthy food, or a safe environment for physical activity.

In the future, more studies would benefit from integrating patients' perspectives as they are vital to delivering effective and equitable health care. Patient-reported outcomes can be valuable trustworthy data that are more accessible because they do not rely on in-person clinic visits. Furthermore, by capitalizing on the expansion of telehealth during the pandemic, there is a new opportunity to capture long-term outcomes for bariatric surgery without placing the burden on a patient's ability to visit a clinic.

Disclosures

The author receives salary support from Blue Cross Blue Shield of Michigan for leadership and participation in the Michigan Bariatric Surgery Collaborative.

Oliver A. Varban, M.D., F.A.C.S., F.A.S.M.B.S.
Adult Bariatric Surgery Program
University of Michigan
Ann Arbor, Michigan

References

[1] Alvarez R, Matusko N, Stricklen AL, Ross R, Buda CM, Varban OA. Factors associated with bariatric surgery utilization among eligible candidates: who drops out? Surg Obes Relat Dis 2018;14(12):1903–10.
[2] Hussain A, Mahawar K, Xia Z, Yang W, El-Hasani S. Obesity and mortality of COVID-19. Meta-analysis [retracted in Obes Res Clin Pract 2021;15(1):100]. Obes Res Clin Pract 2020;14(4):295–300.
[3] Jayawardena R, Misra A. Balanced diet is a major casualty in COVID-19. Diabetes Metab Syndr 2020;14(5):1085–6.
[4] Pellegrini M, Ponzo V, Rosato R, et al. Changes in weight and nutritional habits in adults with obesity during the "Lockdown" period caused by the COVID-19 virus emergency. Nutrients 2020;12(7):2016.
[5] Bellows CF, Gauthier JM, Webber LS. Bariatric aftercare and outcomes in the Medicaid population following sleeve gastrectomy. JSLS 2014;18(4):e2014.00280.

https://doi.org/10.1016/j.soard.2021.06.007