Preoperative Measure of Social Vulnerability is an Independent Predictor of Short Term Postoperative Compliance: Review of Patients Undergoing Sleeve Gastrectomy at a Bariatric Center of Excellence

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Introduction

- There is limited research on long term outcomes of weight loss in patients undergoing bariatric surgery and factors which influence that weight loss long term(2)
- The follow-up of patients with their surgeons represents a possible factor affecting weight loss
- Social vulnerability index (SVI)[(1)], comprised of multiple factors which can affect patients at a community level, represents a useful marker to understand the external pressures on patients undergoing bariatric surgery
- We sought to understand the impact of patients' social vulnerability on their ability to follow-up following a sleeve gastrectomy.

Methods

- An institutional bariatric database created from MBSAQIP reported metrics and retrospective chart review was used to identify patients undergoing elective minimally invasive sleeve gastrectomies from 2019-2020 at a single center.
- Demographic data reviewed included age, gender and preoperative body mass index (BMI), and percent change in BMI at 6 and 12 months.
- Patient's addresses were used to identify census tracts and then correlated to their social vulnerability index.
- Patient's six month and one year follow-up were considered positive if they followed up +/- 3 months of their original surgery date. Patients who followed up were compared to those who did not.
- A p-value less than 0.05 was considered significant.

Results

- A total of 416 patients were identified who had undergone minimally invasive sleeve gastrectomy.
  - 305 (73.3%) of patients followed-up within 6 months
  - 201 (48.3%) followed up at 1 year.
  - A total of 174 (41.7%) followed up at both 6 months and 1 year.
- Follow-up

Follow-up	Mean SVI	95% Confidence Interval	P-value
Any Follow-up	0.70	0.66-0.73	0.04
No Follow-up	0.74	0.72-0.77	

SVI Groups and 1 Year Follow-up

Multivariate Analysis Controlling for Preoperative BMI

SVI Characteristic	Odds Ratio	95% Confidence Interval	p-value
Socioeconomic status	0.62	0.23-1.62	0.33
Household Characteristics	0.59	0.28-1.25	0.17
Racial & Ethnic Minority Status	0.68	0.330-1.55	0.36
Housing Type and Transportation	0.29	0.12-0.72	0.007
Overall SVI	0.45	0.18-1.11	0.08

- On multivariable analysis (controlling for change in BMI) only housing and transportation theme of social vulnerability was significant for one year follow-up (OR 0.295 , p=0.007)

Results

Variable	Value
Mean BMI (95% CI)	45.1 (44.3-45.8)
Mean BMI change at 6 months (95% CI)	9.9 (9.5-10.4)
Mean SVI (95% CI)	0.724 (0.701-0.747)

Discussion/Conclusion

- Social vulnerability plays a role in a patient's ability to follow-up after minimally invasive bariatric surgery.
- Patients with higher SVI, who represent those who may have greater needs, are less likely to follow-up in this cohort
- Addressing social factors prior to surgery with a multidisciplinary team could effectively aid in the success of patient's greater compliance to standard post metabolic surgery protocols.

References

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2. Puzziferri N, Roshek TB 3rd, Mayo HG, Gallagher R, Belle SH, Livingston EH. Long-term follow-up after bariatric surgery: a systematic review. JAMA. 2014 Sep 3;312(9):934-42. doi: 10.1001/jama.2014.10706. PMID: 25182102; PMCID: PMC4409000.