Exploring the Effect of Community Distress on Complications and Quality of Life After Elective Ventral Hernia Repair

Introduction

- Lower socioeconomic status is associated with higher morbidity and mortality, especially in surgical patients
- Quality of life is one of the most important outcome measures in elective ventral hernia repair
- We aim to explore if socioeconomic status effects quality of life outcomes following elective ventral hernia repair

Methods

- Retrospective analysis of Abdominal Core Health Collaborative (ACHQC) data
- **Inclusion criteria:**
  - Elective ventral hernia repair from 2013-2023
  - ≥18 years old
  - Distressed Communities Index (DCI) score available
- **DCI quintiles based on zip code**
  - Distressed
  - At-risk
  - Mid-tier
  - Comfortable
  - Prosperous
- **Primary Outcomes:**
  - Post-operative complication
  - Hernia-Related Quality-of-Life Survey score (HerQLes)

Table 1. Baseline and Operative Characteristics by DCI Quintile

	Distressed (n = 5319)	At-risk (n = 5707)	Mid-tier (n = 6820)	Comfortable (n = 8526)	Prosperous (n = 11839)	p-value
BMI (mean, SD)	32.30 (7.10)	32 (7.10)	31.60 (6.70)	31 (6.80)	30.40 (6.40)	< 0.001
ASA ≥3 (n, %)	3100 (58.3%)	3135 (55%)	3516 (51.6%)	4022 (47.2%)	4655 (39.3%)	< 0.001
Hernia Width (cm) (mean, SD)	5 (6.20)	5 (6.20)	5 (6.10)	4 (5.80)	3 (5.40)	< 0.001
Open Approach (n, %)	3425 (64.4%)	3411 (59.8%)	4205 (61.7%)	5388 (63.2%)	7383 (62.4%)	< 0.001

Table 2. 30-Day Outcomes and One-year HerQLes Differences

	Distressed (n = 5319)	At-risk (n = 5707)	Mid-tier (n = 6820)	Comfortable (n = 8526)	Prosperous (n = 11839)	p-value
Readmission (n, %)	249 (4.7%)	270 (4.7%)	282 (4.1%)	302 (3.5%)	326 (2.8%)	< 0.001
Reoperation (n, %)	96 (1.8%)	95 (1.7%)	94 (1.4%)	124 (1.5%)	104 (0.9%)	< 0.001
SSI (n, %)	208 (3.9%)	226 (4.0%)	250 (3.7%)	234 (2.7%)	254 (2.1%)	< 0.001
SSO (n, %)	622 (11.7%)	633 (11.1%)	668 (9.8%)	717 (8.4%)	829 (7.0%)	< 0.001
Change in HerQLes at one year from baseline (mean, SD)	30 (33)	28.3 (32.20)	31.70 (30.30)	28.30 (28.90)	25 (29)	0.005

Results

- Patients from more distressed communities were more likely to be **younger, female** and identify as a **racial minority**
- Distressed community patients presented with higher BMI, ASA class and larger hernias (table 1)
- Univariate analysis showed lower DCI quintile was associated with higher 30-day rates of **readmission, reoperation, surgical site infection (SSI) and surgical site occurrence (SSO)** (table 2)
- There was no association between community distress and one year hernia recurrence
- Patients from more distressed communities experience a **larger increase in quality of life** as defined by HerQLes scores at one year (table 2)

Conclusions

- Patients from more distressed communities presented in worse clinical status with worse disease process
- This most likely lead to the increased rates of readmission, reoperation, SSI and SSO seen on univariate analysis
- Despite this, patients from distressed communities saw **significantly higher increase in quality of life**
- Access to quality surgical care is significantly impactful in these communities
- **Future directions**: multi-variate analysis to identify for potential modifiable risk factors in these communities

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