

# Evaluation of Health Salience and Social Vulnerabilities Among Outpatient Vascular Surgery Patients

Tyler Lackland (MS3), Nick Schaper (MS4), Neha Gupta (MS3), Brittany Patrick (MS3), Alejandro Ruiz (MS3), Saideen Bose M.D., MPH, Catherine Wittgen M.D., Michael Williams M.D., David Han M.D., Matthew R. Smeds M.D.  
Saint Louis University School of Medicine, St. Louis, MO

## Motivation

Social Determinants of Health (SDOH) has served as a prognostic metric in the majority of medical specialties. SDOH in the context of population health began around the mid-1990s leading to the development of the 5 SDOH pillars: Education/Access, Health Care Quality, Neighborhood/Environment, Social/Community Context, and Economic Stability

Prior research has identified the "what" in terms of which of the 5 pillars serve as our patient's barriers, however we are now in the process of transitioning into the "why" and "how".



## Aims

1. How are our patients prioritizing their health in regard to other life factors as it relates to SDOH pillars
2. How does "Health Salience" compare to a patient's frailty score.

## Definition

- Frailty: state of increased vulnerability based on co-morbidities grouped into an 11-point score stemming from a validated modified frailty index. Higher score → increased vulnerability → correlated with increased morbidity/mortality
- Health Salience: newly defined terminology that seeks to establish how patients prioritize their health in regard to other life factors

## Methods

- 118 patients under care of the outpatient vascular surgery clinic from 18-90 years of age
- Utilized a multi-faceted validated scale including Health Salience Questionnaire, Social Vulnerabilities Index, and Modified Frailty Index administered to patients via electronic survey
- Survey distribution over 4-week period conducted via Qualtrics
- Completed a univariate analysis to compare factors
- Patients divided into high health salience score (>0.6) and low health salience score (<0.6) based on answer to survey question

## Results

### Demographics

- 118/348 participants (33%)
- 60 males (51.3%)
- 113 US born (96.6%)
- 71 white (60.7%)
- Mean Age: 59.6
- 69 participants believed in "good/excellent health"

Demographics	Total	High Salience	Low Salience	p-value
Age	59.4 (14.7)	57.5 (16.4)	61.4 (12.5)	0.079
Gender - Male	60 (51.3%)	28 (46.7%)	32 (56.1%)	0.305
US born	113 (96.6%)	56 (93.3%)	57 (100%)	0.047
Married	42 (35.9%)	22 (36.7%)	20 (35.1%)	0.859
White	71 (60.7%)	31 (51.7%)	40 (70.2%)	0.04
Education beyond HS	62 (53.0)	33 (55.0%)	29 (50.9%)	0.655
Income				
<25k	46 (39.3%)	25 (41.7%)	21 (36.8%)	0.953
25-100k	48 (41.0%)	24 (40.0%)	24 (42.1%)	
>100k	8 (6.8%)	4 (6.7%)	4 (7.0%)	
not reported	15 (12.8%)	7 (11.7%)	8 (14.0%)	

### Discussion

- Health Salience as it relates to outpatient vascular surgery patients continues to remain an aspect of social determinants of health that needs further assessment and understanding.
- Relating health salience to the variables reviewed in this study, there was positive correlation with high health salience and those who were US born, identified as white, believed they had good/excellent health, and had prior medical history of myocardial infarction.
- Limitations of the study include sample size (N=118) and data collection bias as participants were surveyed in clinic which can introduce bias for questions such as "I care about my health"
- Goal is to understand how we can utilize this data to intervene and advocate on our patient's behalf.

### Survey Elements

- Demographics
- Income
- Frailty Score via mFI 11-Variable Index
- Home Health Score
- Finances
- Transportation
- Social Involvement
- Health Score Ranking



### Demographics cont

Demographics cont	Total	High Salience	Low Salience	p-value
# Dependents	1.86 (±1.05)	1.91 (±1.15)	1.81 (±0.95)	0.318
Walk without assistance	70 (59.8%)	36 (60.0%)	34 (59.7%)	0.969
Believe Good/excellent health	69 (59.0%)	41 (68.3%)	28 (49.1%)	0.035
Has a PCP	108 (92.3%)	54 (90.0%)	54 (94.7%)	0.337
Time to Family Doc	20.5 (±16.5)	21.8 (±16.8)	19.2 (±16.22)	0.217
Time to Walk-in clinic	17.1 (±14.7)	16.9 (±15.8)	17.3 (±13.6)	0.455

### Modified Frailty Index

Modified Frailty Index	Total	High Salience	Low Salience	p-value
Diabetes Mellitus Type 2	41 (35.0%)	22 (36.7%)	19 (33.3%)	0.706
Hypertension	77 (65.8%)	37 (61.7%)	40 (70.2%)	0.332
Congestive Heart Failure	20 (17.1%)	11 (18.3%)	9 (15.8%)	0.736
Myocardial Infarction	13 (11.1%)	10 (16.7%)	3 (5.26%)	0.05
Peripheral Vascular Disease	40 (34.2%)	24 (40.0%)	16 (28.1%)	0.174
Cardiac Problems	8 (6.8%)	5 (8.3%)	3 (5.3%)	0.511
Lung Problems	16 (13.7%)	8 (13.3%)	8 (14.0%)	0.912
Transient Ischemic Attack	3 (2.6%)	0 (0%)	3 (5.3%)	0.072
Stroke with deficit	12 (10.3%)	6 (10.0%)	6 (10.5%)	0.925

### SVI

SVI	Total	High Salience	Low Salience	p-value
Social Vulnerability Index Score				
High Home Score	28 (23.9%)	15 (25.0%)	13 (22.8%)	0.781
High Financial Score	10 (8.55%)	6 (10.0%)	4 (7.0%)	0.564
High Transport Score	106 (90.6%)	52 (86.7%)	54 (94.7%)	0.135
High Social Score	69 (59.0%)	39 (65.0%)	30 (52.6%)	0.174
High Health Score	96 (82.1%)	50 (83.3%)	46 (80.7%)	0.711
Modified Frailty Index	63 (53.9%)	33 (55.0%)	30 (52.6%)	0.797

### Conclusions

- Health Salience may be associated with country of birth and ethnicity as well as patient belief of "good" health.
- Current data shows no association to social vulnerabilities index
- Further study needed to assess for health salience as it relates to the modified frailty index, and the social vulnerabilities index (SVI)

### References

- [1] Diaz, Adrian, et al. "Association of County-Level Social Vulnerability with Elective versus Non-Elective Colorectal Surgery." *Journal of Gastrointestinal Surgery*, vol. 25, no. 3, 2020, pp. 786-794. <https://doi.org/10.1007/s11605-020-04768-3>.
- [2] Labinec, Hanna E., et al. "Social Vulnerability Subtheme Analysis Improves Perioperative Risk Stratification in Hepatopancreatic Surgery." *Journal of Gastrointestinal Surgery*, vol. 26 no. 6, 2022, pp. 1171-1177. <https://doi.org/10.1007/s11605-022-05245-9>.
- [3] Tang, Karen L., et al. "Development and Validation of a Social Vulnerabilities Survey for Medical Inpatients." *BMJ Open*, vol. 12, no. 6, 2022. <https://doi.org/10.1136/bmjopen-2021-059788>.

### Contact Information

Email: [tyler.lackland@health.slu.edu](mailto:tyler.lackland@health.slu.edu)