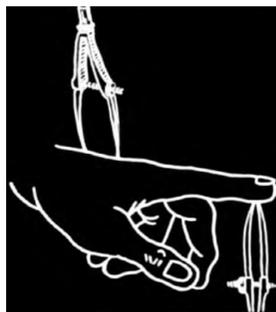
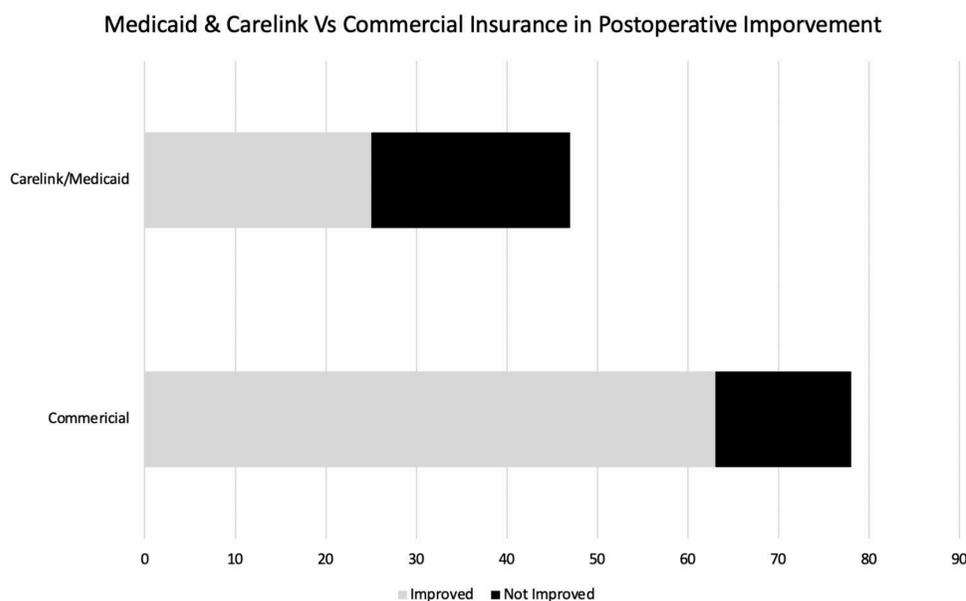


Introduction

- Carpal tunnel syndrome is the most prevalent nerve entrapment condition worldwide. Diagnosis often requires physical exam, electromyography and nerve conduction studies. The most common form of treatment is carpal tunnel release, with the literature estimating a success rate of 75-90%.
- The two-point discrimination test, measured along the median nerve, is a valid method of measuring starting characteristics and likelihood of improvement in carpal tunnel surgery candidates
- Many conditions have found to be correlated with carpal tunnel surgery release outcomes. Such conditions include a history of drinking, tobacco and or illicit drug use. However, an analysis of two-point score before the operation and after with respect to Socioeconomic Status (SES) as a related factor has yet to be investigated. In this study we seek to rectify this gap in knowledge.



Comparing proportions of improved vs not improved in the Carelink/Medicaid group vs those who had commercial insurance (p = .0021).



Insurance for Preop 2 Point Score			
	N	Mean	P Value
Commercial	78	6.85 (2)	<.001
Carelink/Medicaid	47	13.19 (2.1)	

	Improved	Not Improved
Commercial	63	15
Carelink/Medicaid	25	22
No Comorbidity	30	14
Comorbidity Present	58	23
Age <60	54	22
Age 60+	34	15
Female	76	22
Male	12	15
Non-Hispanic	39	17
Hispanic	49	20
White	86	33
Black	2	4

Proportions of improved vs not improved between groups. Fisher's exact test was used to gauge significance. Bolded variables designate significance p < .05

Results

- Of the 125 patients who met the inclusion criteria 47 (37.6%) had Medicaid or CareLink and 79 (62.4%) had commercial insurance.
- Medicaid/CareLink patients presented with higher two-point discrimination on initial presentation (p < .001).
- Compared to commercial insurance, Medicaid/CareLink patients were less likely to show improvement in postoperative two-point discrimination (p < 0.001).
 - Medicaid or Carelink patients had a 8.67 times increased odds of not showing improvement in postoperative two-point discrimination (p < 0.001)
- In addition, male patients were also less likely to show improvement.
 - Females had 6.71 times increased odds of showing improvement when compared to men (p < 0.001)
- Medical comorbidities and an age greater than 60 were not shown to have a significant effect on postoperative improvement in two-point discrimination.

Conclusion

- Two-point discrimination is an accepted tool in assessing postoperative success.
- Medical comorbidities and insurance status have been demonstrated to have an effect surgical outcome in the orthopaedic literature.
- While medical comorbidities did not have a significant effect on postoperative two point in the current study, patients with low-income status (Medicaid/CareLink) may have a less predictable outcome.
- These socioeconomic considerations are critical in appropriately risk stratifying surgical candidates and counseling patients that tactile acuity may be less predictable

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Materials and Methods

- Retrospectively reviewed all patients who underwent carpal tunnel release in our institutional database from 2018-2020.
- All patients between 50 and 86 years with a minimum of six-week follow-up were included.
- The primary outcome of interest was to assess differences in preoperative and postoperative two-point discrimination scores based on insurance status.
- Patient demographics were identified, as well as insurance status (i.e., having subsidized insurance Medicaid/CareLink vs commercial), and various comorbidities.
- Patients were categorized as “improved” or “not improved” based on the difference in their preoperative and postoperative two-point tests.
- Results were analyzed with Fisher's Exact test to examine the significance between the various associations studied. For the analysis of the preoperative score, we ran a logistic regression model to analyze the relationship between income status and preoperative scores, inferential statistics was computed with appropriate t tests.