

## BACKGROUND

- Level of education can be used to assess cognitive performance in participant populations
- Behavior Rating Inventory of Executive Function (BRIEF) assesses cognitive performance by quantifying self-reported impairment of Executive Function (EF)
- Unlike education, which is known to be a predictor of smoking status, little is known about the relation between EF and smoking

### Purpose

- Explore relation between smoking status and EF
- Contrast with relation between smoking status and education

## METHOD

### Participants

- Re-analyzed data collected to assess predictors of cardiac rehab participation (n = 313, 68% male)

### Smoking Status and Education level

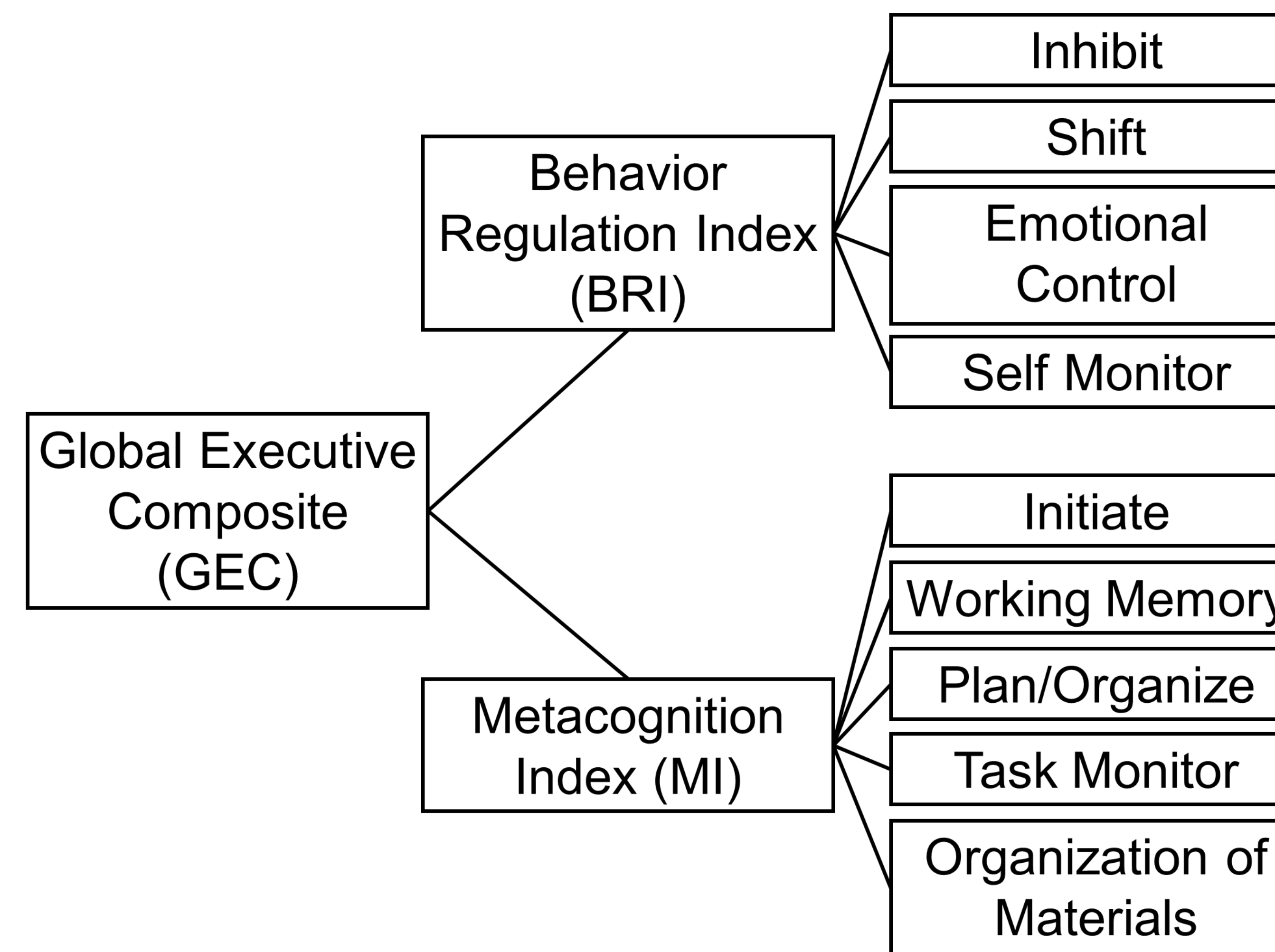
- Assessed via self report

### Executive Function

- Administered the BRIEF

Characteristic	Smokers				Total	
	Current	Former	Both	Never		
Sex	Male	29	85	114	99	213
	Female	7	35	42	58	100
	Total	36	120	156	157	313
Education	Unknown	3	16	19	26	45
	Less than HS	7	9	16	10	26
	HS	19	48	67	49	116
	Some College	1	4	5	5	10
	College	6	39	45	62	107
	Advanced Degree	0	4	4	5	9
Total	36	120	156	157	313	

## EXECUTIVE FUNCTION



## RESULTS

Measure of Cognitive Function	Smoking Status			
	F Value	p Value	F Value	p Value
Inhibit	0.930	0.396	1.134	0.288
Shift	1.849	0.159	3.037	0.082
Emotional Control	2.678	0.070	0.341	0.560
Self Monitor	0.457	0.634	0.163	0.686
<b>Behavioral Regulation Index</b>	0.771	0.463	0.871	0.351
Initiate	0.637	0.530	0.427	0.514
Working Memory	1.989	0.139	0.020	0.889
Plan/Organize	0.207	0.813	0.402	0.527
Task Monitor	0.513	0.599	0.895	0.345
Organization of Materials	1.488	0.228	0.310	0.578
<b>Metacognition Index</b>	0.592	0.554	0.003	0.957
<b>Global Executive Composite</b>	0.737	0.479	0.285	0.594
Education	7.357	0.001	12.74	< 0.001

## DISCUSSION

### Executive Function and Smoking

- No significant relation between smoking status and:
  - Overall measure of EF (GEC)
  - Either major index (BRI and MI)
  - Any of the nine individual scales
- Post-hoc tests (Tukey's) did not reveal any significant pairwise differences
- Coding smoking status as a binary measure did not reveal any significant relations either

### Education and Smoking

- Significant relation between level of education and smoking status when:
  - Current/Former/Never (F = 7.357, p = 0.001)
  - Yes/No (F = 12.74, p < 0.001)

### Education and Executive Function

- No significant relation between education and any measure of EF

## CONCLUSIONS

- No relation between EF and smoking
- Relation between education and smoking was reaffirmed
- Education and EF assess different aspects of cognitive performance

## REFERENCES

- Khadanga, S., Savage, P. D., Gaalema, D. E., & Ades, P. A. (2021). *Journal of Cardiopulmonary Rehabilitation and Prevention*, 41(5), 322–327.
- Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (n.d.). <https://www.parinc.com/Products/Pkey/24>