

CHARACTERISTICS OF INDIVIDUALS WITH ACQUIRED BRAIN INJURY AND NICOTINE USE

Jessica Podcasy, M.S.¹, Alison H. Tverdov, Psy.D.²
 Immaculata University¹, Bancroft NeuroRehab²

Background

- In 2010 an estimated 2.5-6.5 million Americans lived with traumatic brain injury (TBI). Comorbid conditions such as alcohol and substance use disorders are also prevalent.
- Chronic cigarette smoking is associated with significant neurocognitive abnormalities in non-clinical samples. In individuals with mild TBI (mTBI), smoking contributes to slow improvement in multiple cognitive domains.
- Previous literature focuses on health outcomes and recovery time in individuals that smoke and have TBI. Limited emphasis has been placed on the establishment of effective interventions.

Purpose --

- This study aimed to describe a sample of individuals with severe acquired brain injury (ABI) with the intention of designing smoking cessation interventions.

Methods

- Data was collected at a long-term post-acute rehabilitation facility.
 - 24 individuals previously diagnosed with severe brain injury.
 - 12 individuals with ABI and used nicotine
 - 12 individuals with ABI who did not use nicotine.
- Matched based on age, gender, and level of functioning.
- Subtests from the Neuropsychological Assessment Battery (NAB) and Trails A from the Trailmaking Test.
 - Cognitive measures of attention, processing speed, and executive functioning.
- The World Health Organization Quality of Life - BREF (WHOQOL-BREF). WHOQOL-BREF
 - Self-report measure - quality of life in relation to health care, including physical health, psychological health, social relationships, and environment.
 - 5-point Likert scale. Higher scores = higher quality of life
- Brief Mood Survey (BMS).
 - Levels of depression, anger and anxiety

Participant	Average Matched Age	Gender
1	32.70	Female
2	63.27	Male
3	50.97	Male
4	46.24	Female
5	46.23	Male
6	45.19	Male
7	36.98	Male
8	59.58	Male
9	35.82	Male
10	30.78	Male
11	47.21	Female
12	48.65	Female

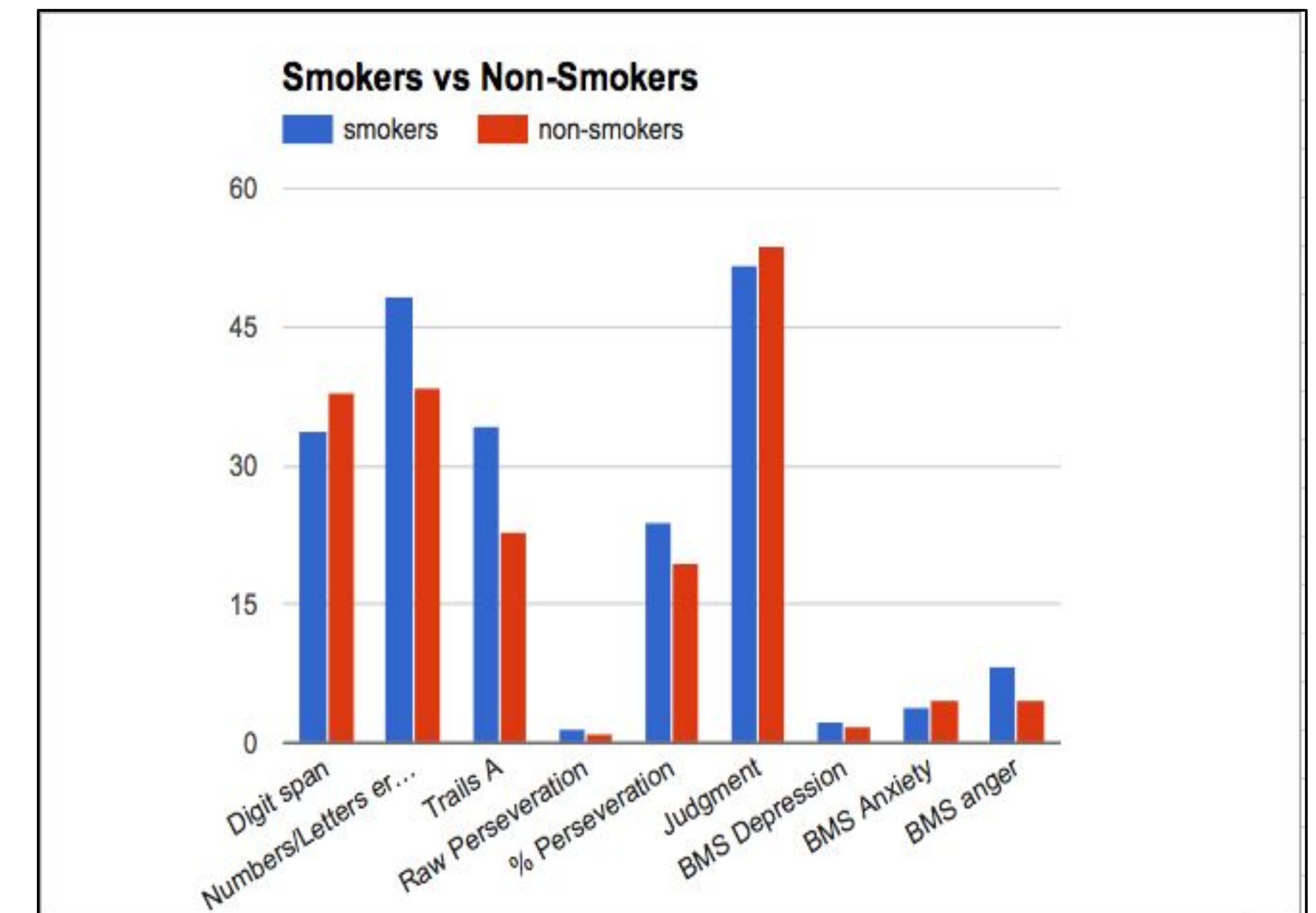
Results

In a retrospective design, t-tests were used to compare two groups of matched participants. Findings did not reach clinical significance.

Trends revealed --

- Smoking group performed better on selective attention and processing speed tasks
- Higher ratings of anger
- Higher ratings of social and environmental quality of life

Descriptive Statistics		M(SD) Smokers	M(SD) Non-smokers	Cohen's d
WHOQOL BREF	Domain 1: Physical Health	25.18 (7.58)	23.6 (3.72)	0.77
	Domain 2: Psychological	23.09 (6.63)	21.68 (3.33)	0.70
	Domain 3: Social Relationships	10.45 (3.74)	8.1 (3.12)	1.95
	Domain 4: Environment	32.18 (7.62)	29.5 (6.22)	2.19



Conclusions

- Associated with differences in:
 - Emotional functioning
 - QoL
 - Attention and processing speed scores when compared to non-smokers
- Some benefit to continued smoking despite health risks and neurocognitive slowing in a ABI population.

Implications --

- Techniques targeting the reduction of anger and increase in attentional skills could assist individuals with smoking cessation or reduction.

Limitations --

- Small sample size
- Homogenous racial background of participants
- Quality of matched participants
- Impact of diminished self-awareness of brain-injured participants on self-report