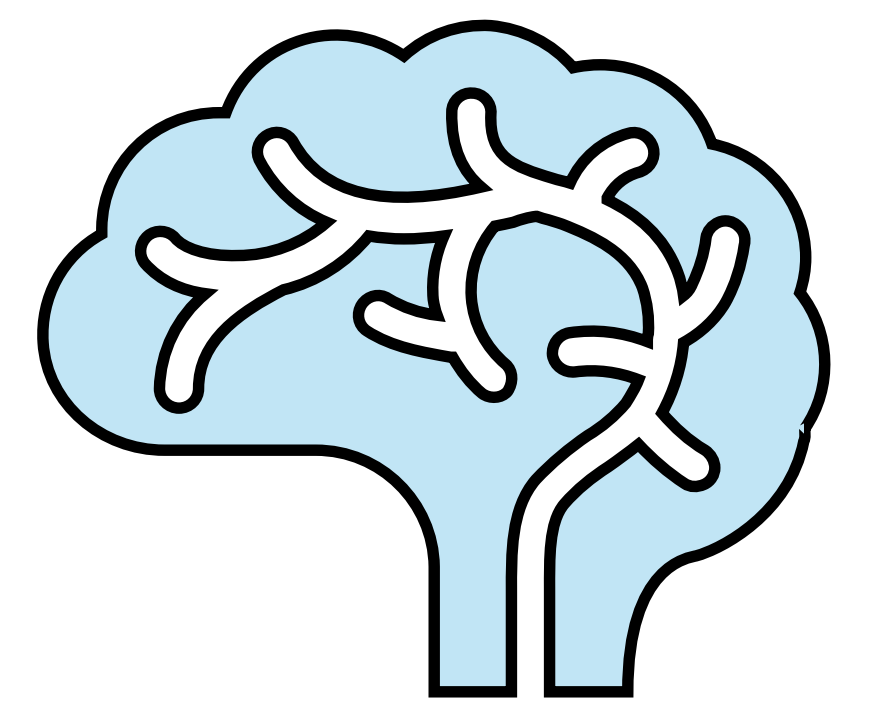


# The Relationship Between Autonomic Functioning and Cognitive Functioning Using the COMPASS-31 as a Measure of Autonomic Functioning



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## Introduction

### Autonomic Nervous System (ANS):

- Think "automatic"
  - Blood flow, digestion, heart rate variability
- Sympathetic nervous system and parasympathetic nervous system
  - "fight or flight" and "rest and digest" systems

### Cognitive Function

- Memory, executive function, information processing, attention, and more!
- What lets the brain make decisions and gain new knowledge

### Autonomic Dysfunction

- Many forms; severely under researched
- Have only tested cognitive functioning in those with diagnosable health conditions and not just general autonomic functioning

## Methods

- Total of 28 participants aged 18-25
  - All CoW students
- Given COMPASS-31 to assess autonomic functioning
- Then completed 4 different cognitive assessments within a single hour
  - CogniFit → Selective attention
  - Trails → Visual attention + information processes speed + executive function
  - SDMT → Information processing speed
  - Stroop → Executive function

## Results

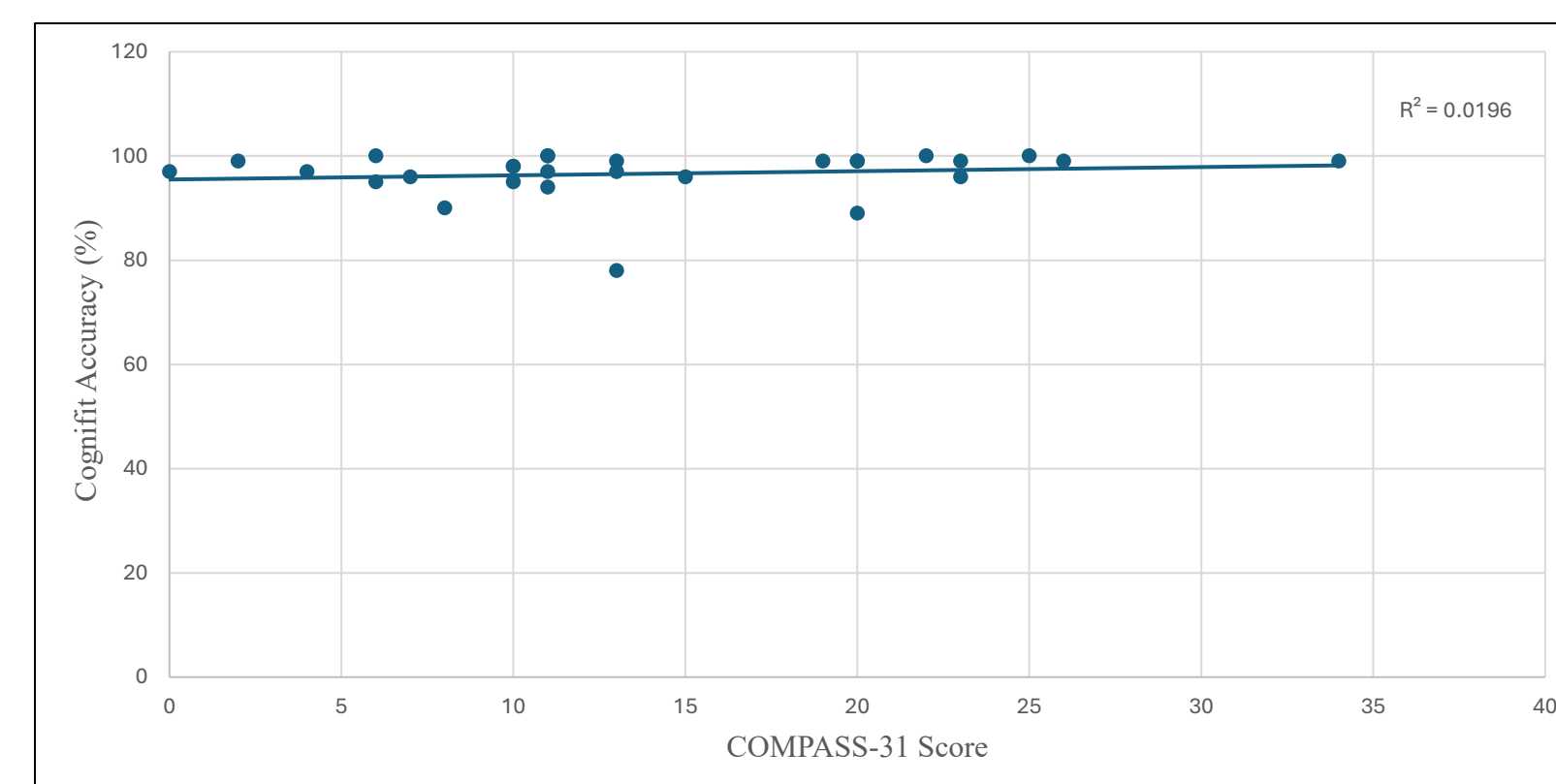


Figure 1: CogniFit Accuracy Vs. COMPASS-31 Score

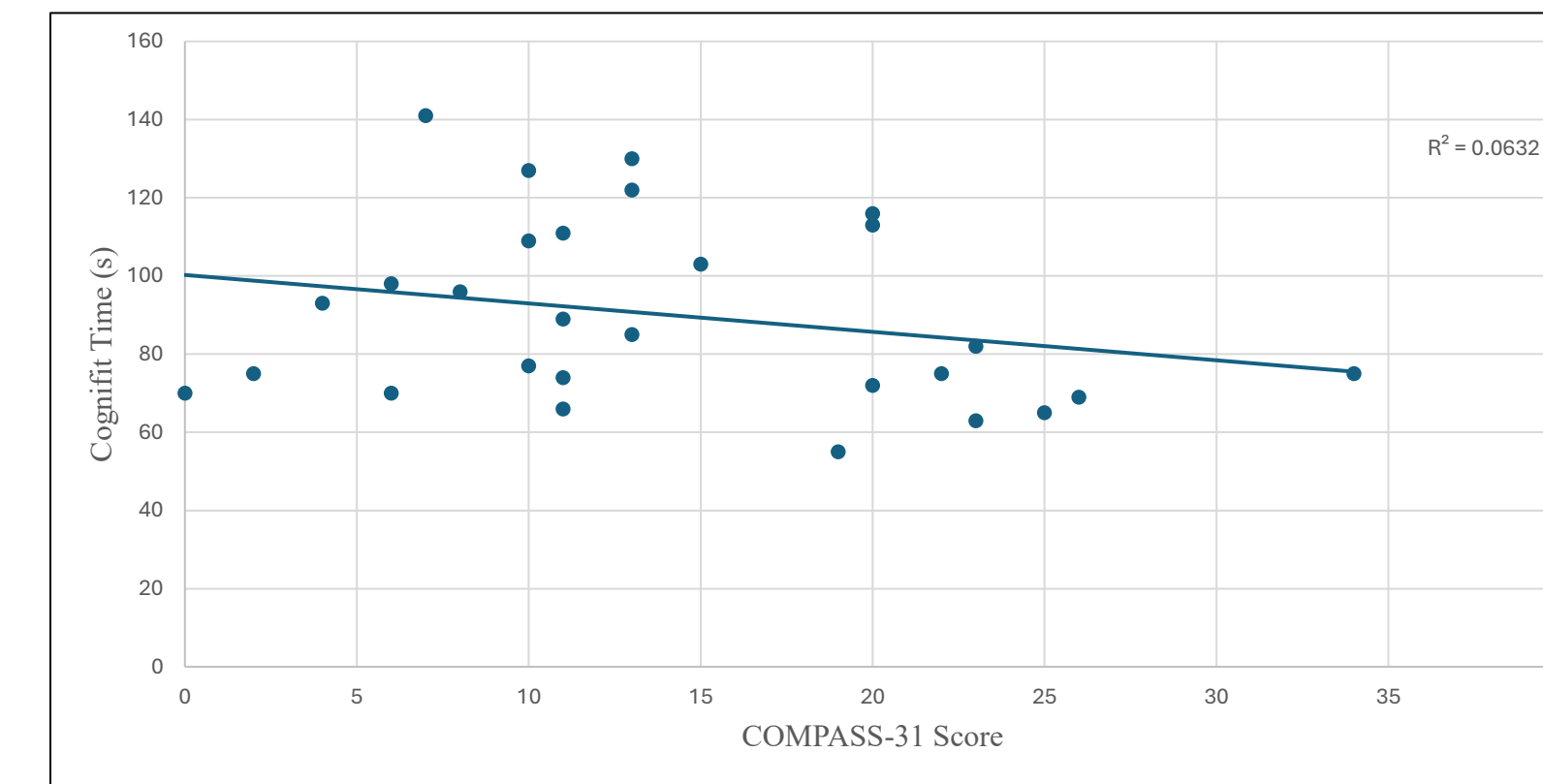


Figure 2: CogniFit Time Vs. COMPASS-31 Score

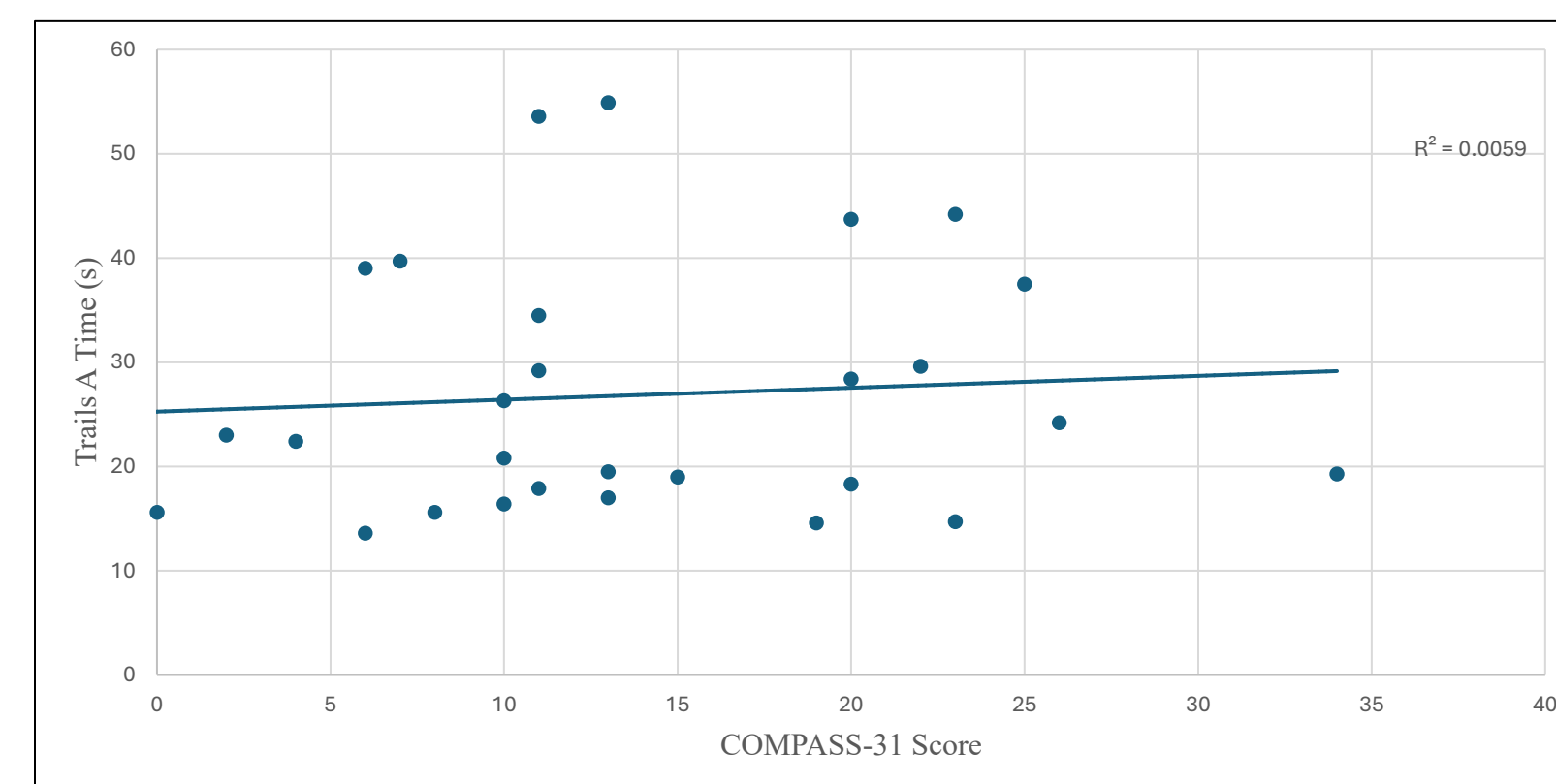


Figure 3: Trails A Time (s) Vs. COMPASS-31 Score

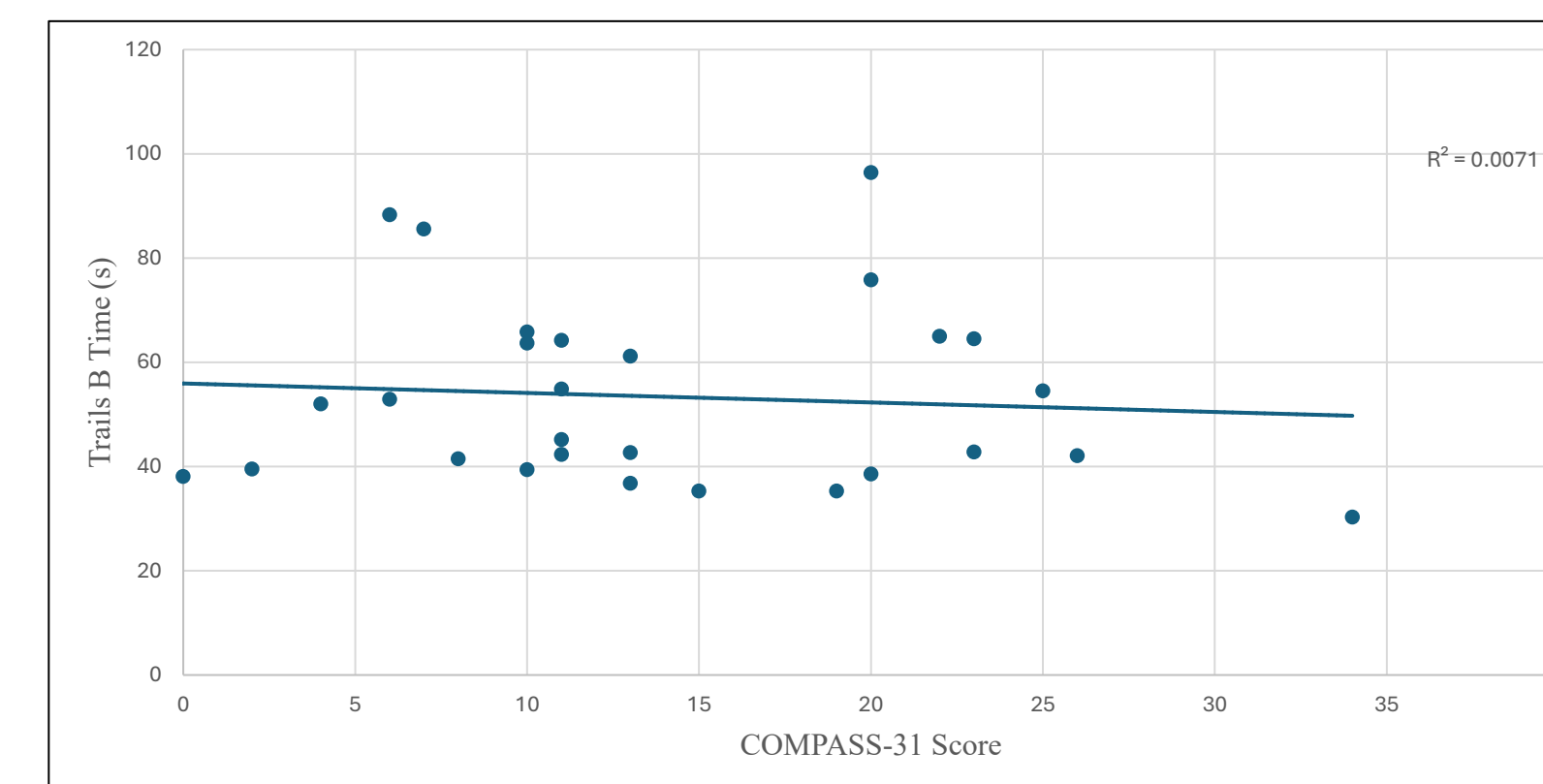


Figure 4: Trails B Time (s) Vs. COMPASS-31 Score

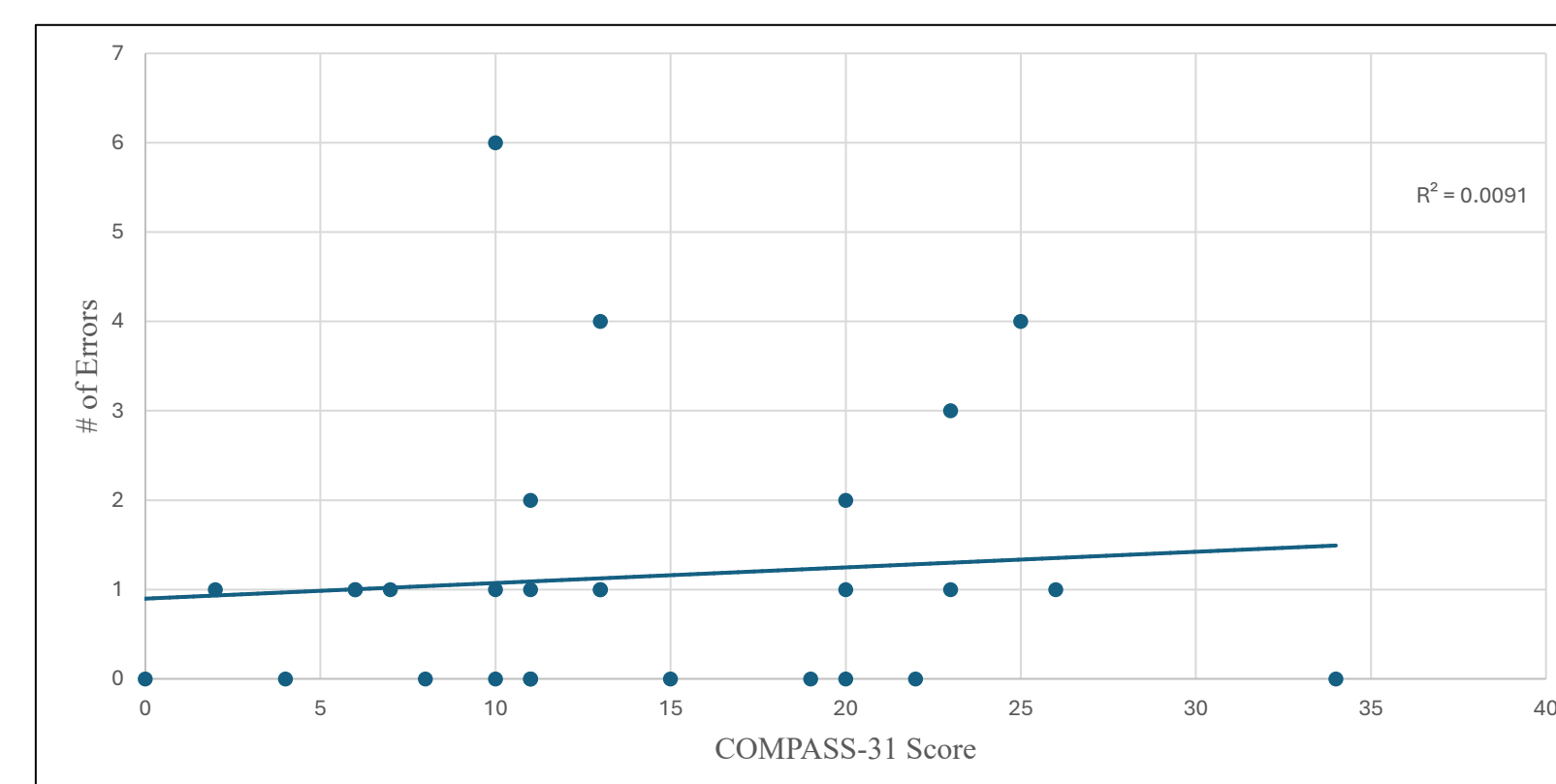


Figure 5: SDMT Errors Vs. COMPASS-31 Score

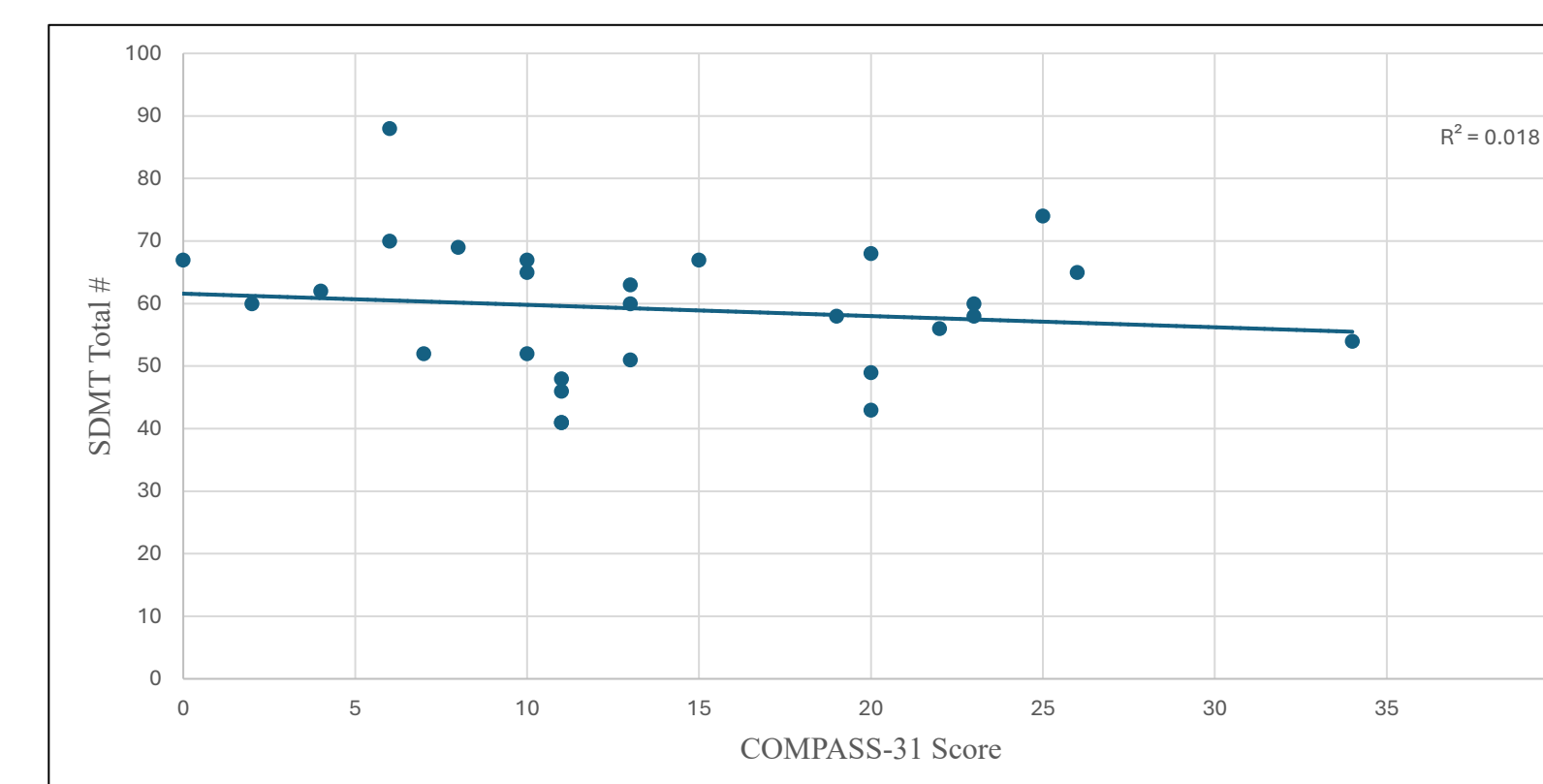


Figure 6: SDMT Total # Vs. COMPASS-31 Score

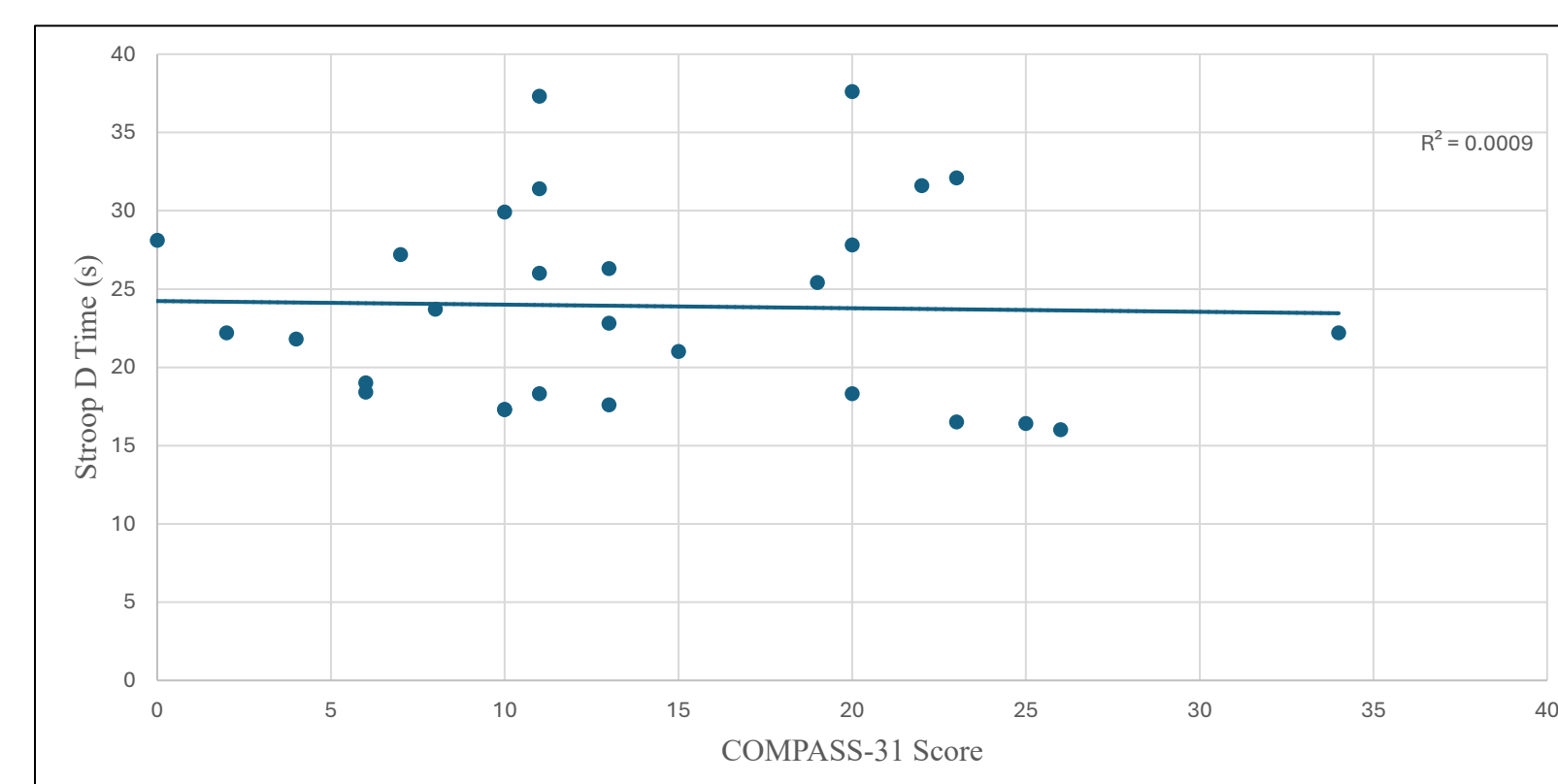


Figure 7: Stroop D Time (s) Vs. COMPASS-31 Score

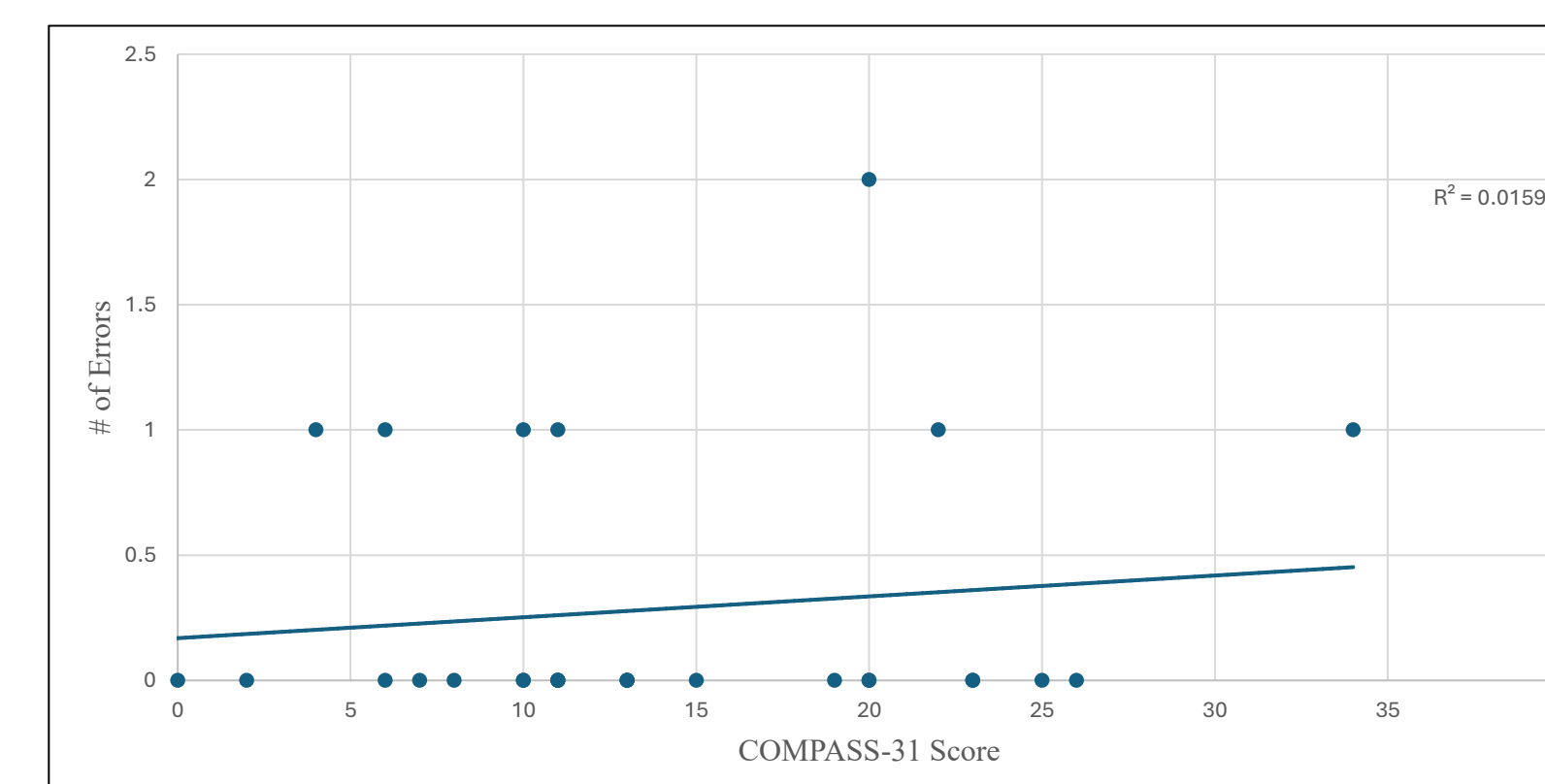


Figure 8: Stroop D Errors Vs. COMPASS-31 Score

	1	2	3	4	5	6	7	8
$p$	0.48	0.20	0.70	0.67	0.63	0.50	0.88	0.52

Figure 9:  $p$  Values For Each Graph

## Conclusion

My results **did not** corroborate the results found in similar studies.

## Discussion

### Limitations

- Sample size was only college students
- COMPASS-31 is a measure using self-assessment

### Future Directions

- Repeat experiment using many different age groups and educational background
- Repeat experiment using a different measure of Autonomic functioning

### Additional Thoughts

- Lack of research on ANS + dysfunction of it

## Acknowledgements

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## References

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