

Coping and Calories: Exploring the Relationship Between Meal Completion and Distress in Children and Adolescents with Eating Disorders



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BACKGROUND

- **Eating Disorders** have the highest mortality rate of any mental illness¹
- **Anxiety disorders** are common in people with anorexia nervosa and bulimia nervosa²
- The **Ease of Eating Scale (EOES)** was developed to measure Food Avoidance Behaviors (FABs) and meal completion³. The EOES score combines FABs and meal completion. A higher score indicates more food avoidance behaviors and difficulty completing meals

HYPOTHESIS



- Figure 1: Distress and anxiety are negatively correlated with meal completion

OBJECTIVES

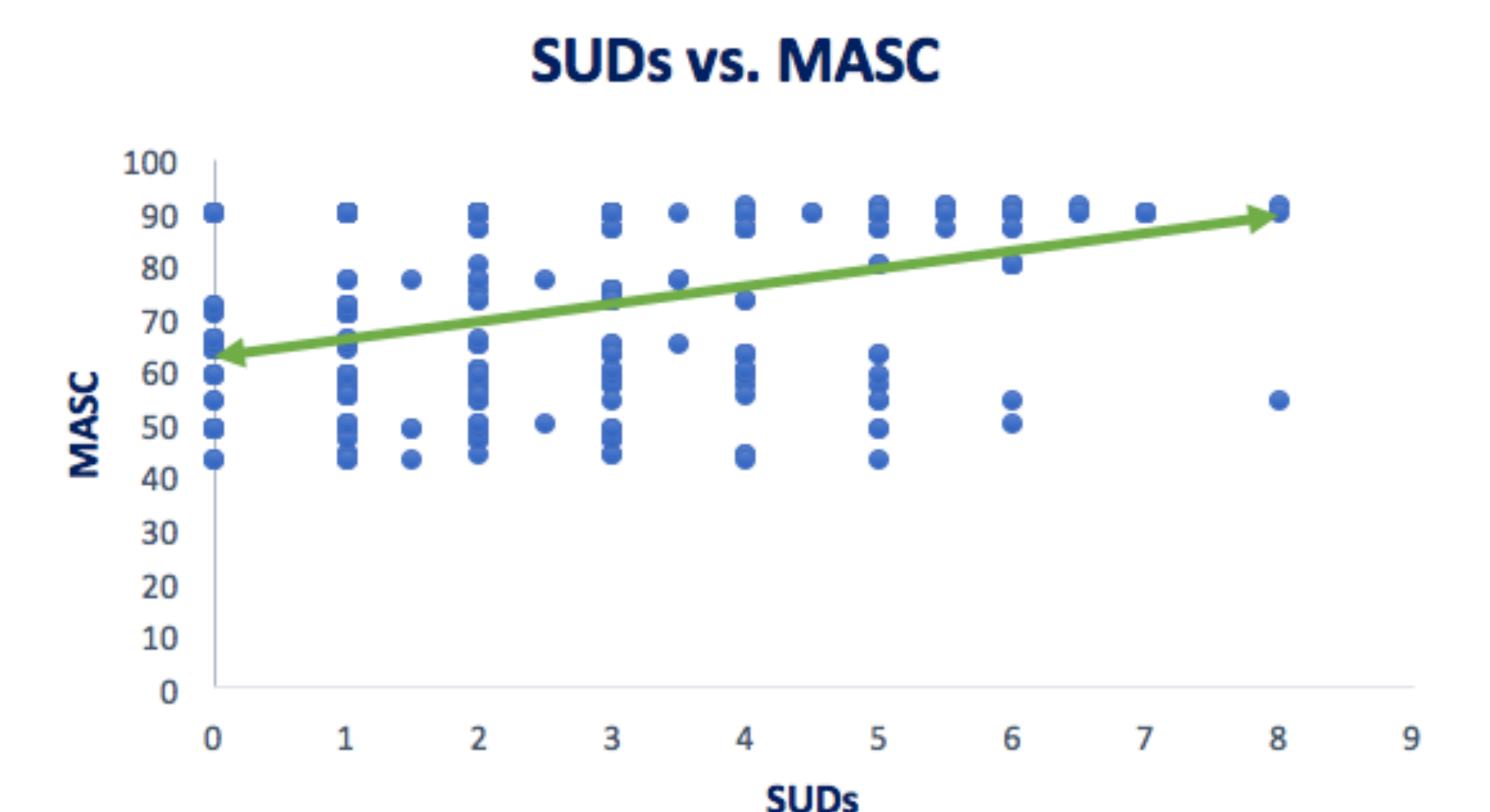
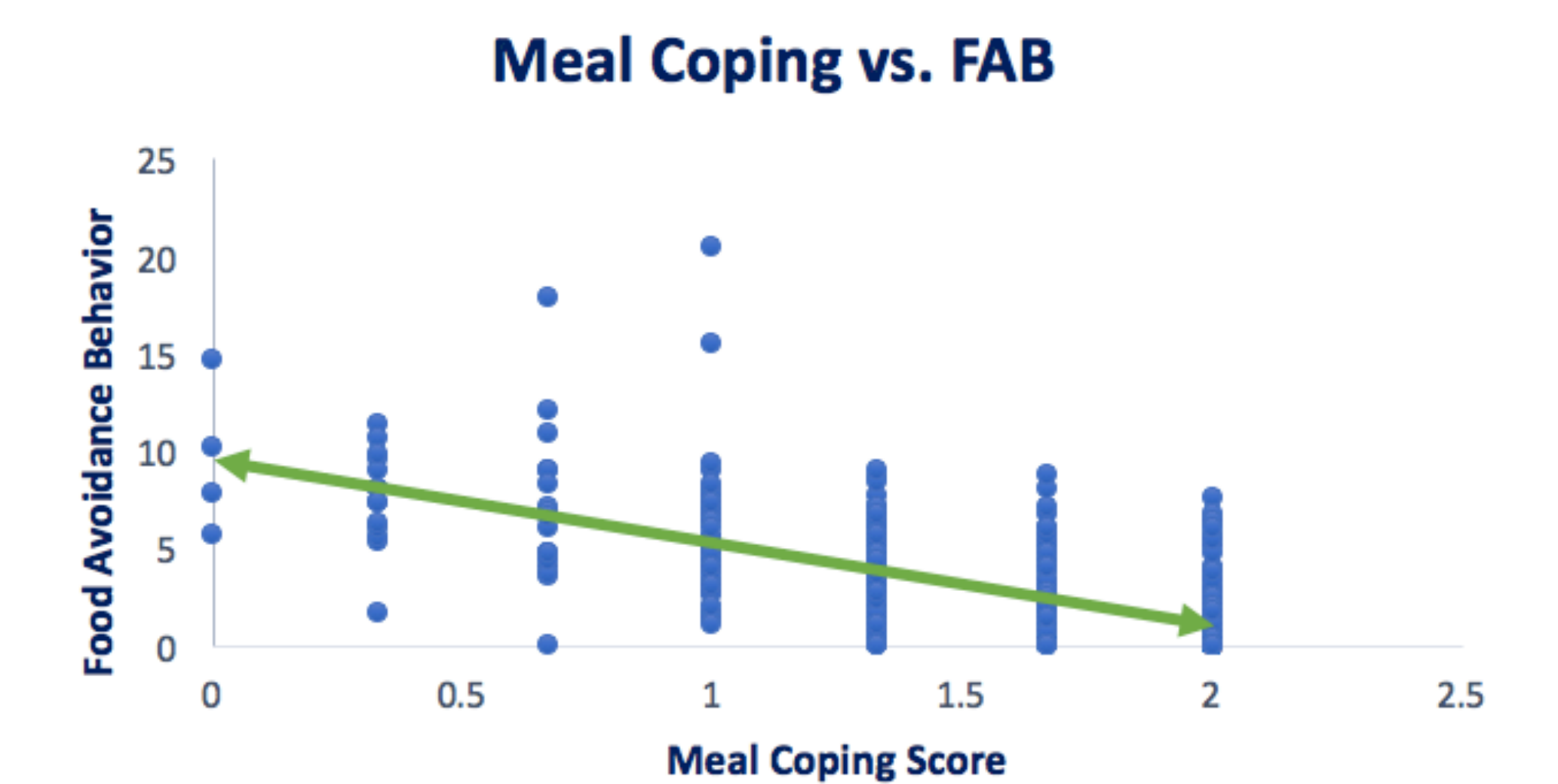
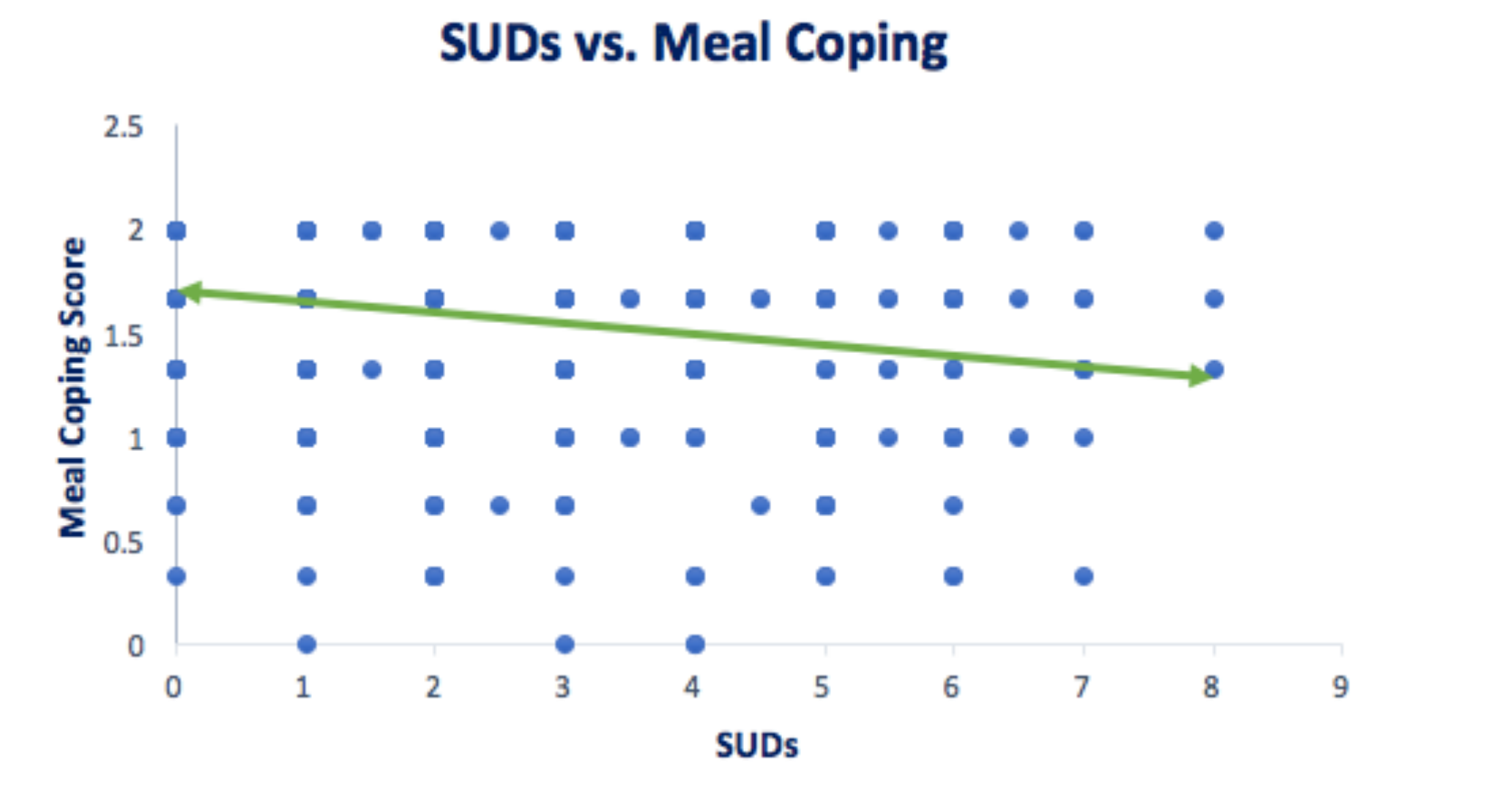
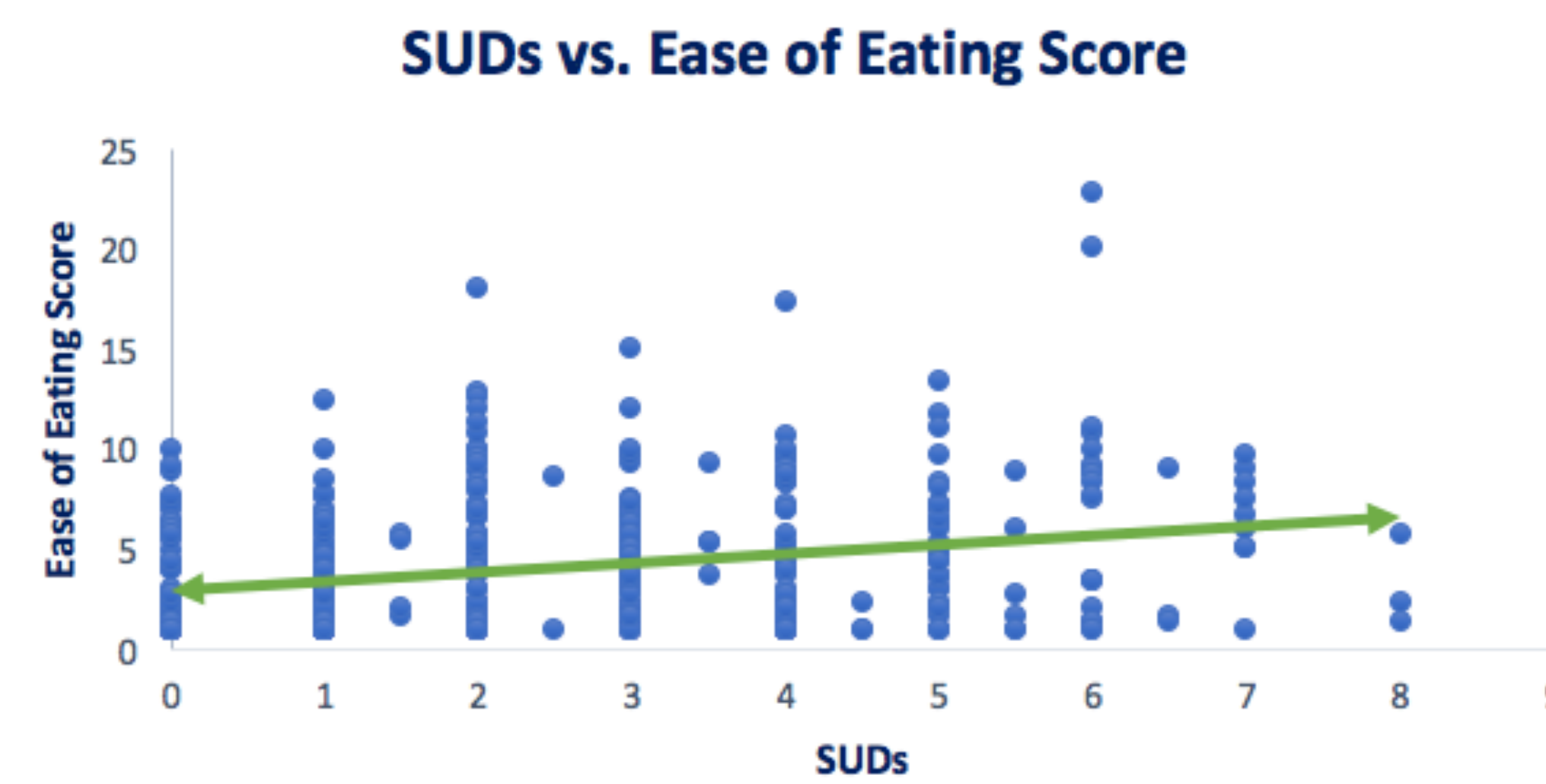
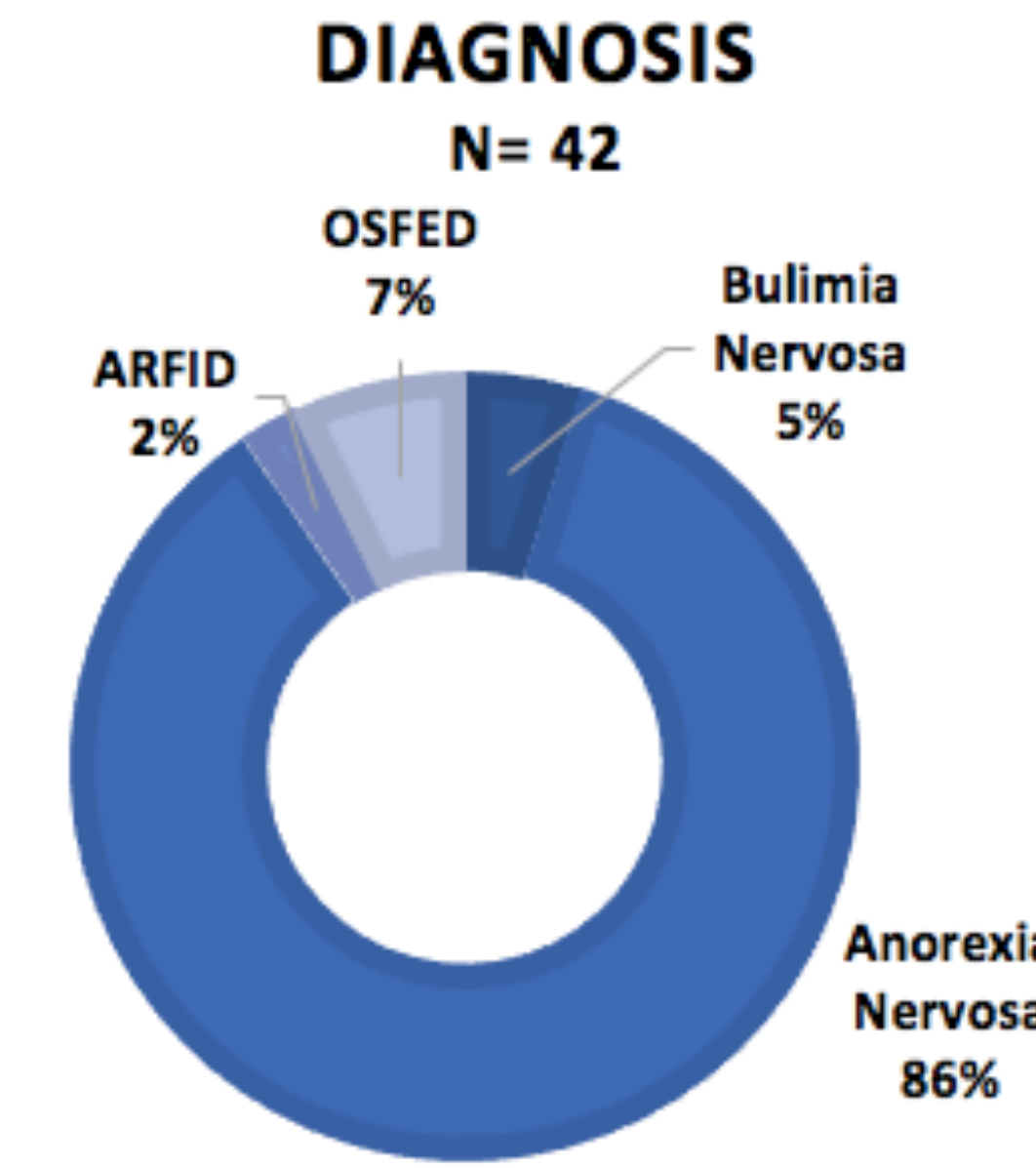
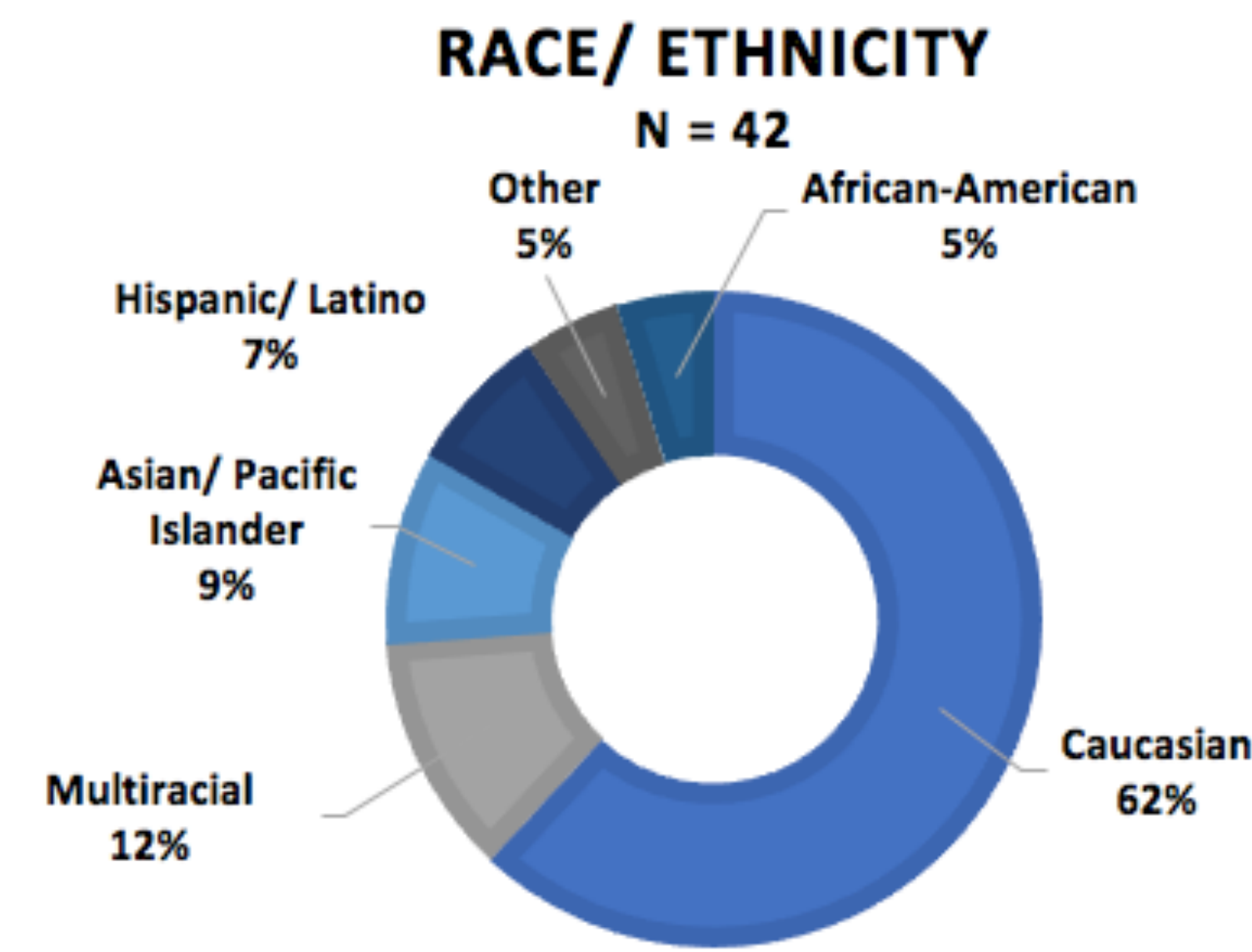
- Validate the efficacy of the Ease of Eating Scale, meal time coping score, and SUDs score in determining an accurate assessment that exhibits improvement

METHODS

- An IRB approved retrospective chart review was conducted for patients treated in the Eating Disorders Program from 2015 – 2017
- Measures included in the study:
 - **Ease of Eating Scale (EOES):** rated 3x a day (each meal) Food Avoidance Behaviors (FAB's) and meal completion³ (0-28)
 - **Multidimensional Anxiety Scale for Children (MASC)** administered once on admission
 - <40 = low anxiety
 - 40-69 = elevated anxiety
 - 70+ = extremely elevated anxiety
 - **Subjective Units of Distress (SUDs):** rated once a day: self-report measures of anxiety and distress (0-10)
 - **The meal time coping score:** rated 3x a day, by the person observing the patient during the meal.
 - 0= highly anxious, low coping, 1 = attempt of coping skills, 2 = successful coping skills
- Inclusion criteria:
 - 3 meals scored a day using the EOES and for ten consecutive days (program days 2-11)
 - Baseline MASC score
 - Daily SUDs score
 - 3 Meal time coping scored a day
- Observations and interviews were conducted with the EDU staff working with patients in the program
- Pearson's Correlation run with SPSS to evaluate the relationship between eating disordered behavior and stress and anxiety, and to evaluate change over time in each variable over the course of ten days

RESULTS

- 100 charts were screened
- 42 subjects met the inclusion criteria
 - 4 males and 38 females with average age of 15 with range of 13-19



- **The change in time over the course of ten days of the average of each variables follows:**

Variable	Day 2	Day 11	Significance
SUDs	2.8	2.6	.367
Food Avoidance Behavior	4.46	2.53	.012
Ease of Eating Score	5.94	3.74	.01
Meal Coping Score	1.49	1.61	.260

CONCLUSIONS

- **The hypothesis was supported: higher distress and anxiety was correlated with difficulty completing meals in the program**
- The EOES provides a useful measure of FABs in teens with eating disorders
- The EOES score was correlated with measures of anxiety and distress
- Decreased distress (SUDs) was correlated with improvements in meal time coping and ease of eating
- The average MASC score was a 71.25 indicating that children and adolescents in the Eating Disorders Program have elevated anxiety
- Over the course of ten days in program, EOES, and FAB scores decreased significantly, while there were non-significant trends in improvement of meal coping improved and SUDS

CHALLENGES

- Participants under the age of 12 did not meet criteria for this study because the SUDs was not used by this age group until 2016
- The chart review of the 42 participants was done by hand making human error more possible and time consuming
- In some cases, the SUDs were not in the flowsheet causing extra time to look for SUDs in the nurse's note
- Different mental health counselors and parents scored meals which could contribute to inconsistency in scoring

FUTURE DIRECTIONS

- Meal time coping will be added to the EOES flowsheet to improve staff charting efficiency
- CAS request submitted for calculations to be done automatically for mental health counselors
- Scoring of Food Avoidance Behaviors for total the total daily EOES score was being done manually by staff. A request has been placed for this to be automated in EPIC, saving staff time and improving accuracy.
- Documentation of who scored the meal (specific staff / parent) will be added to the flow sheet. This will improve awareness of how the child eats with different people and is critical for the prospective validation study

REFERENCES

1. Smink, F. E., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports*, 14(4), 406-414.
2. Kaye, W., Bulik, C., Thornton, L., Barbarich, N., & Masters, K. (Dec. 2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *Am J Psychiatry*, 121(12), 2215-2221. Retrieved July 23, 2018.
3. Hagman, J., MD, Gralko, J., PhD, Kelly, M., RN, & Wamboldt, M., MD. (2006). Validation of the Ease of Eating Scale for Eating Disorders. AACAP. MASC 2nd. (n.d.). Retrieved from <https://www.mhs.com/MHS-Assessment?prodname=masc2>