

# Associations between anxiety and adherence barriers among pediatric solid organ pre-transplant patients

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## INTRODUCTION

### Adherence

Adherence to medication is one of the most crucial aspects of post-transplant medical care.

- As many as 25–70% of pediatric transplant patients are non-adherent at some point<sup>2</sup>
- Medication non-adherence is the leading cause of organ rejection.<sup>1</sup> Poor adherence can lead to readmittance into the hospital and can even be fatal.
- Cognitive factors, aversive medication properties, and voluntary resistance, are some of the types of barriers associated with poor medication adherence in pediatric transplant recipients.<sup>1</sup>

### Anxiety

Research suggests that children who have had solid organ transplant are at higher risk for poor psychosocial functioning relative to healthy peers and those with other medical conditions.<sup>3</sup>

- No studies could be identified that examine whether anxiety symptoms pre-transplant are related to trajectories of medication adherence in adolescent heart, liver and kidney transplant candidates using SCARED assessment.

One study's findings showed higher anxiety was not related to poorer adherence, conclusions were that maybe children who worry are more likely to be playful I their general habits, including medication-taking behaviors.<sup>3</sup>

### Hypothesis

We hypothesized we would also find that those who report higher anxiety would report less barriers.

## Study's Purpose

To examine the relationship between patient self-report of anxiety symptoms and adherence barriers during the pre-transplant evaluation process for solid organ transplant pediatric patients.

## METHODS

- Retrospective review of an IRB approved clinical registry (REDCap)
- Electronic medical records review



Transplant psychologists administered pre-transplant evaluation to heart, liver and kidney transplant candidates. Data was collected over 6 years (2014-2019).

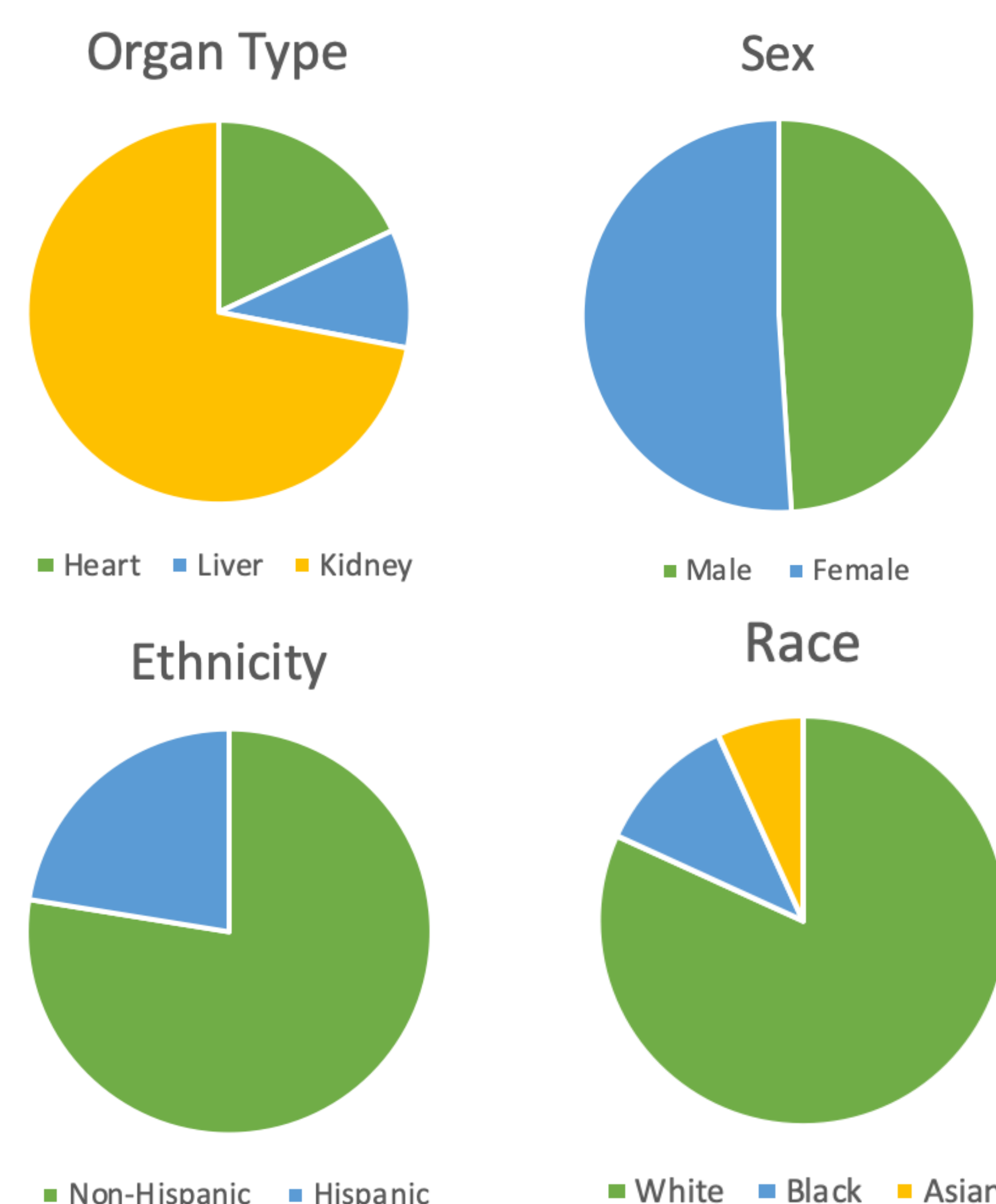
### Assessments completed at evaluation

- **AMBS** – Self-report 17 question, 5-point Likert scale adherence anxiety screener.
- **SCARED** –Self-report 41 question, 3-point Likert scale anxiety screener for children.

### Participants

- N=49
- Participants aged 8-17
- Mean age= 14.2

## Demographics



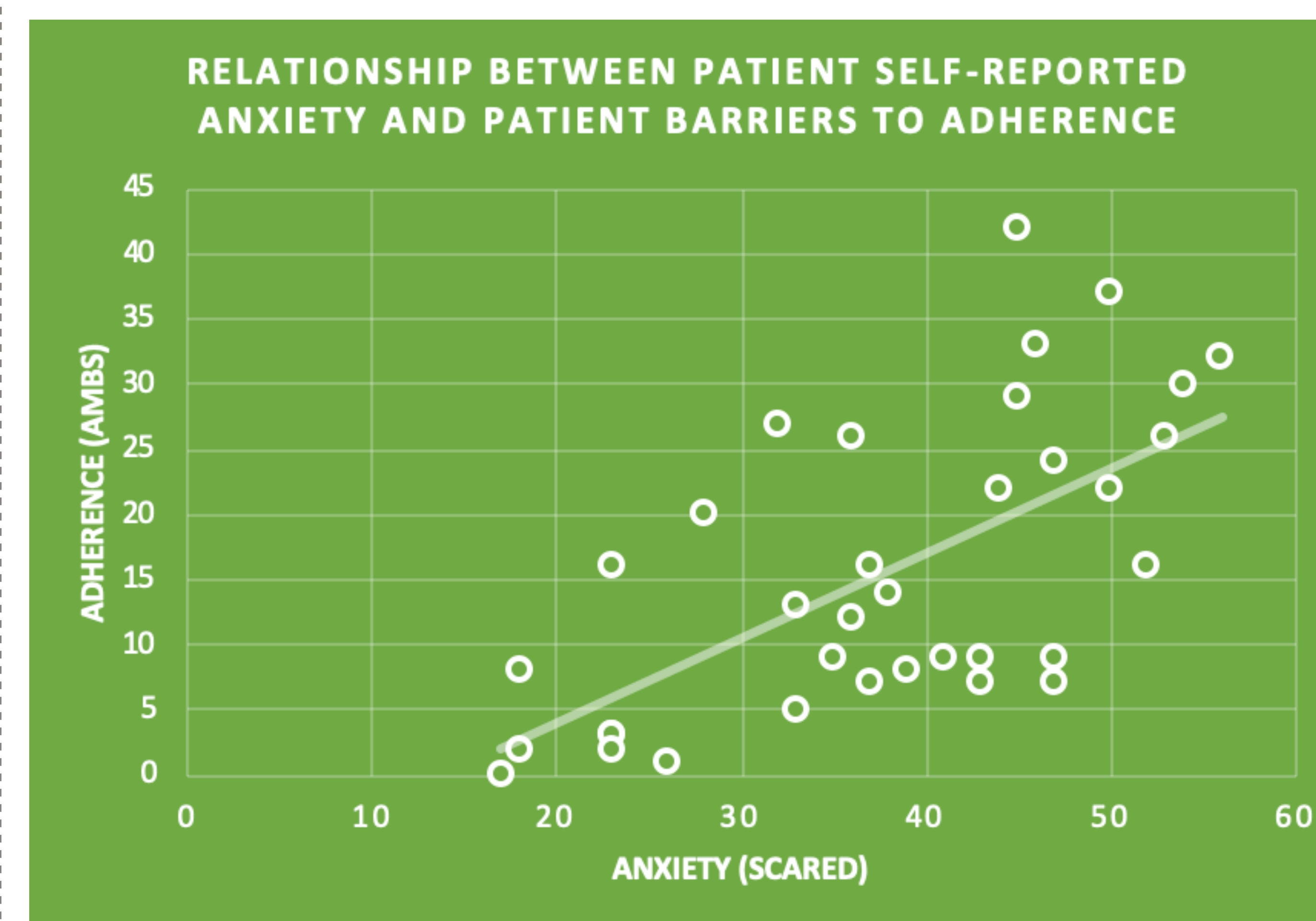
## RESULTS

Normality testing (Skew, Kurtosis, Shapiro-Wilks) was conducted and results showed the data was normally distributed.

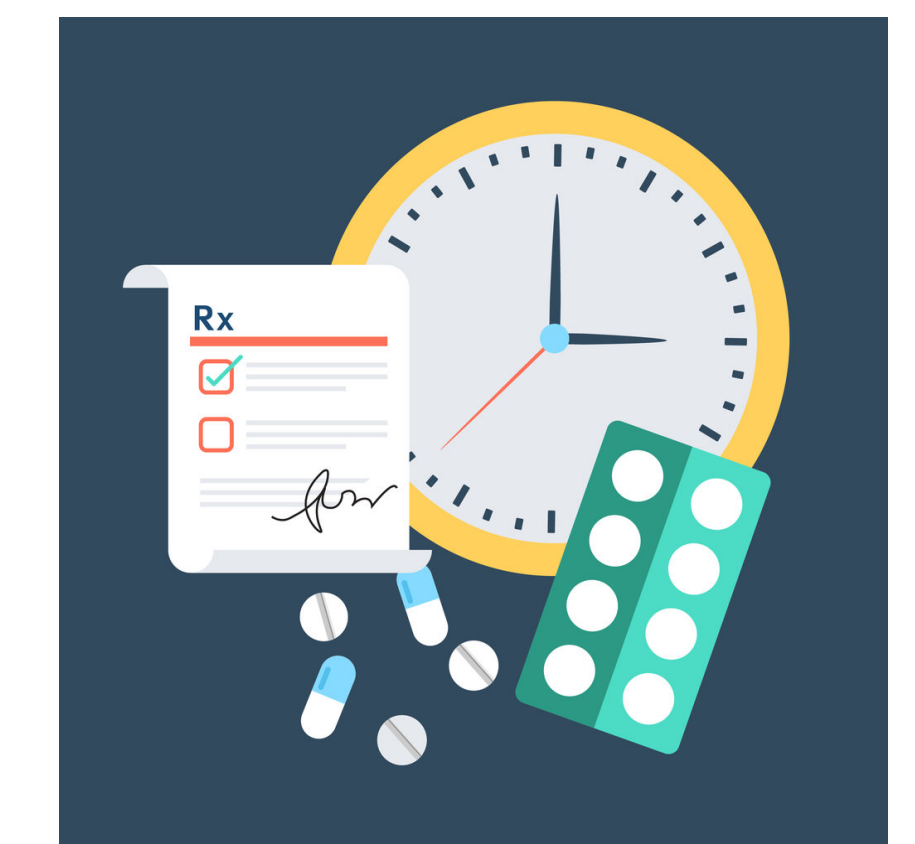
A Pearson product-moment correlation coefficient was computed to assess the relationship between patient self-report anxiety symptoms and patient self-reported barriers to adherence.

There was a moderate, positive correlation between the two variables,  $r = .572$ ,  $N = 49$ ,  $p = .000$ .

Increases in anxiety symptoms were correlated with an increase in adherence barriers.



## CONCLUSIONS



Symptoms of anxiety may exacerbate barriers to medication adherence and cause capacity to attend to medical tasks to be impaired. Symptoms of anxiety could lead to forgetting medication, reduced energy levels, sleep interference, and a diminished capacity to attend to medical tasks.

Having a psychologist on the transplant team administering a psychological evaluation is critical in assisting the transplant team with identifying risk factors in patients that could lead to poor outcomes.

## FUTURE DIRECTIONS

- Larger multisite study on the relationship between anxiety symptoms and adherence pre-transplant using the SCARED tool to establish an average anxiety rate in pre-transplant adolescence.
- Clinicians might consider using longitudinal assessments of adherence if patients have higher or lower levels of anxiety.
- Development of early adherence barrier interventions for patients reporting higher levels on anxiety at pre-transplant evaluation stage.

## REFERENCES

- <sup>1</sup>Eaton, Cyd K., et al. "Clinical Cutoffs for Adherence Barriers in Solid Organ Transplant Recipients: How Many Is Too Many?" *Journal of Pediatric Psychology*, vol. 40, no. 4, 2014, pp. 431–441. doi:10.1093/jpepsy/jsu102.
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- <sup>3</sup>Wu, Y. P., Aylward, B. S., & Steele, R. G. (2010). Associations between internalizing symptoms and trajectories of medication adherence among pediatric renal and liver transplant recipients. *Journal of Pediatric Psychology*, 35(9), 1016-1027. doi:http://dx.doi.org.auraralibrary.idm.oclc.org/10.1093/jpepsy/jsq014