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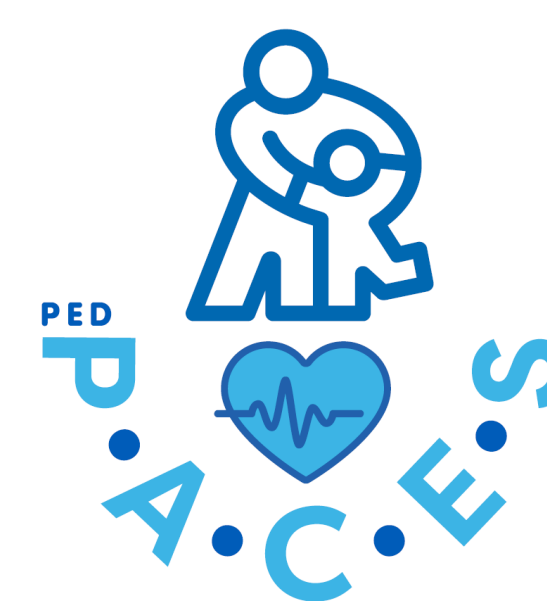
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**Authors**

David A. White, Jami Gross-Toalson, Emily Cramer, Lindsey Malloy-Walton, Mollie Walton, Laura Martis, Brandy Enneking, Kelli M. Teson, Jessica S. Watson, Dara Watkins, and William R. Black



# Development of a Kinesiophobia Scale for Adolescents with Heart Disease: A Preliminary Analysis of Validity and Reliability



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## Background

**Kinesiophobia (KP)** - an excessive, irrational, and debilitating fear of physical activity (PA) resulting from a feeling of vulnerability related to a medical condition.<sup>1</sup>

KP is a manifestation of the **Fear-Avoidance Model**.<sup>2,3</sup>

KP is measured using the **Tampa Scale for KP (TSK)**<sup>4</sup>

- 17-item survey developed with chronic pain
- Survey items are specific to pain.



In adolescents, increased KP is associated with<sup>5-7</sup>...

↑ Depression	↑ Functional Disability	↑ Post-traumatic stress
↑ Anxiety	↑ Catastrophizing	↓ QoL

Similar to adolescents with chronic pain, adolescents with heart disease may avoid PA due to fear related to their heart disease.<sup>8-12</sup>

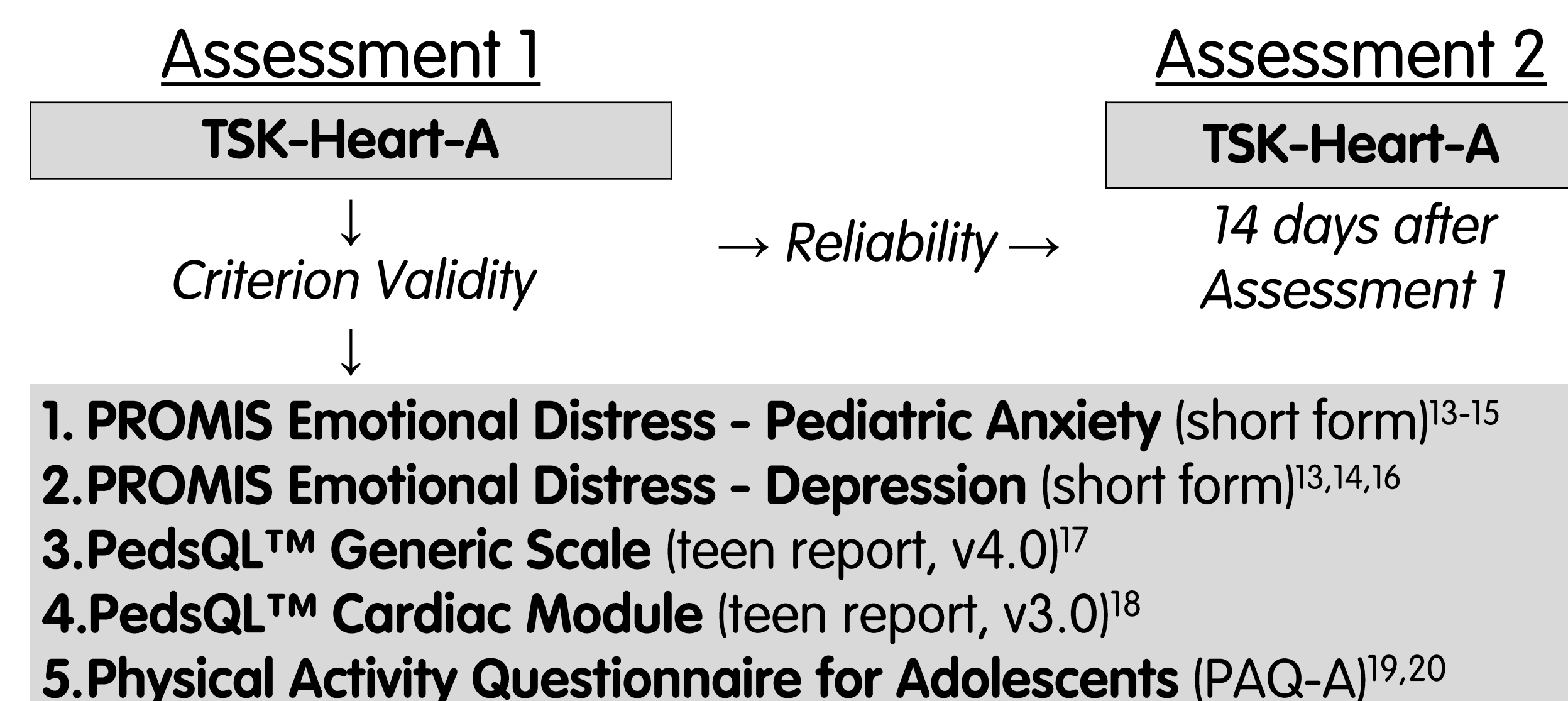
There are no studies or validated tools to measure of KP in adolescents with heart disease.

## Methods

### PARTICIPANTS

Inclusion Criteria	Exclusion Criteria
<b>Phase II: Content Area Experts</b>	
<ul style="list-style-type: none"> <li>Professional or academic researcher</li> <li>Expertise in KP or pediatric HD</li> </ul>	<ul style="list-style-type: none"> <li>Non-English speaking</li> <li>Professional conflict of interest</li> </ul>
<b>Phases III and IV: Adolescents with Heart Disease (HD)</b>	
<ul style="list-style-type: none"> <li>Age 12-18 years old</li> <li>Diagnosed with at least one of the following HDs:                             <ul style="list-style-type: none"> <li>Cardiomyopathy</li> <li>Complex SVT</li> <li>CPVT</li> <li>Long QT Syndrome (LQTS)</li> <li>ARVC</li> <li>Ventricular Tachycardia (VT)</li> <li>WPW</li> <li>Idiopathic sudden cardiac arrest (ISCA)</li> <li>Fontan</li> <li>Brugada Syndrome</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Non-English speaking</li> <li>Significant intellectual or developmental delay</li> <li>Cardiac surgery or procedure in the past 1 month</li> <li>Curative cardiac EP procedure</li> <li>Unable to complete electronic surveys at home</li> </ul>

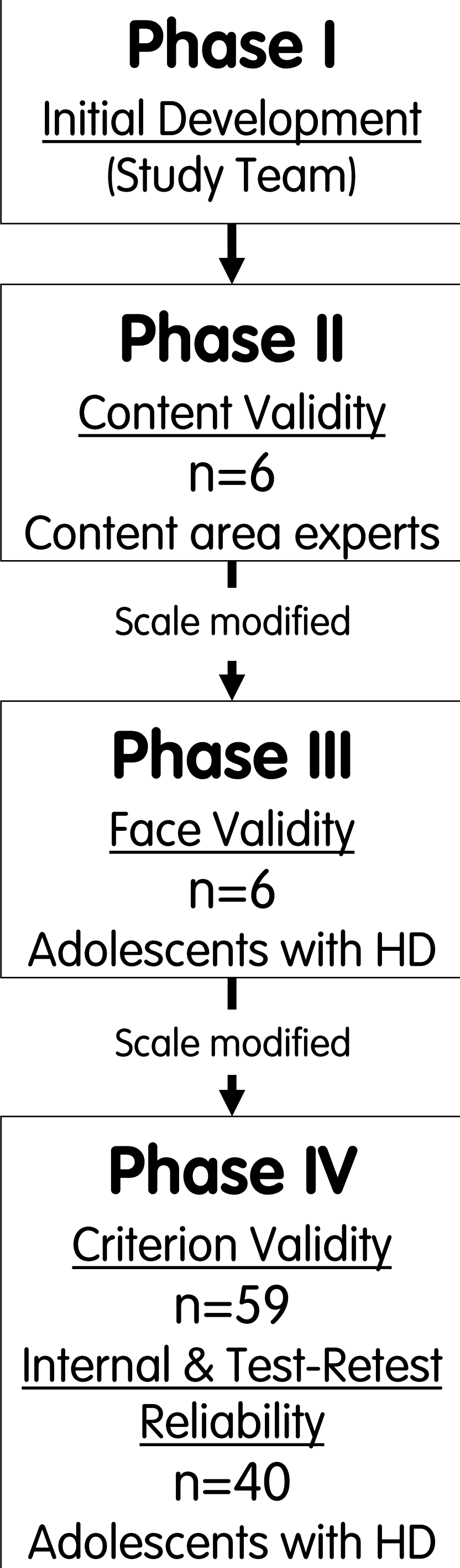
### VALIDITY & RELIABILITY



### STATISTICS

- Correlation analyses were used to evaluate the validity of the TSK-Heart-A.
- Reliability was evaluated using test-retest reliability and Cronbach's alpha.

### Study Design

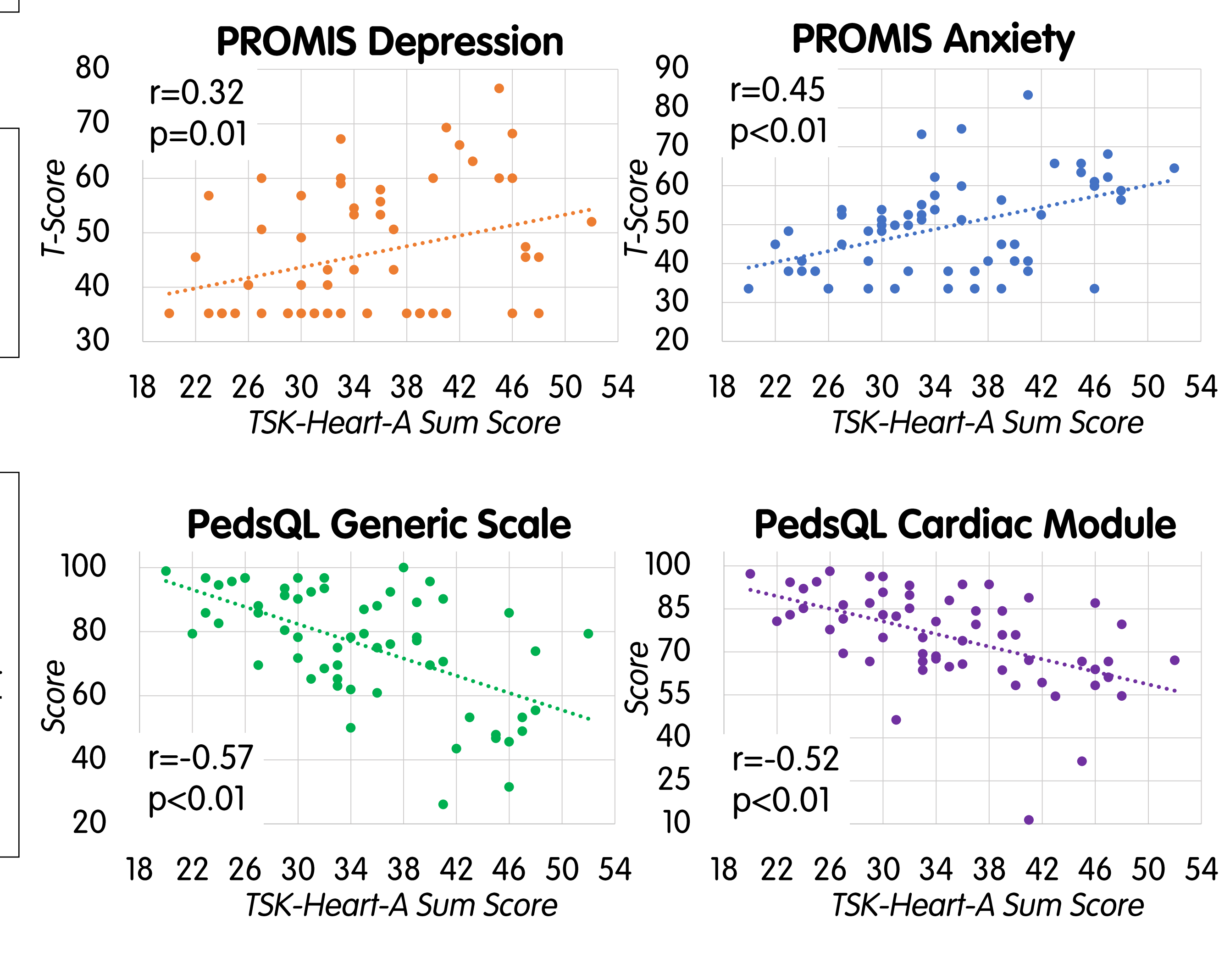


## Results

### Key Variables

Key Variables	n	Mean ± SD	Min	Max
TSK-Heart-A Sum Score	59	33.8 ± 7.8	19	52
PROMIS Anxiety T-Score	59	49.4 ± 12.0	33.5	83.3
PROMIS Depression T-Score	59	46.0 ± 11.8	35.2	76.5
PedsQL Generic Scale Score	59	75.8 ± 18.2	26.1	100
PedsQL Cardiac Module Score	59	75.3 ± 16.4	11.4	98.2
PAQ-A Sum Score	59	1.97 ± 0.7	1	3.7

### VALIDITY



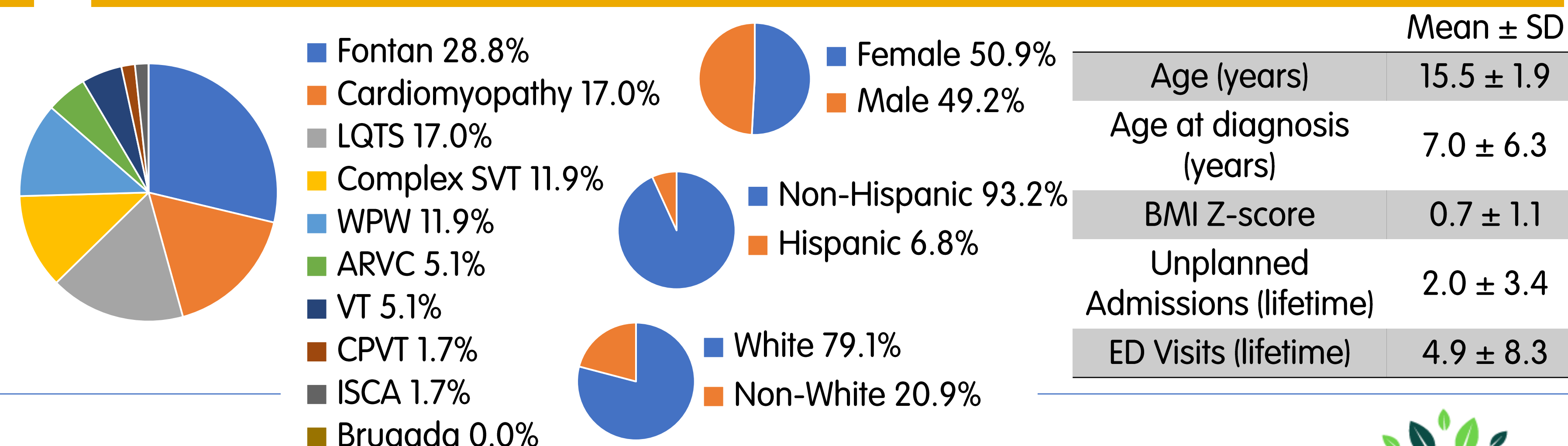
### RELIABILITY

Survey Item	Standardized Variables		Test-Retest Coefficient
	Correlation to total	Alpha if Deleted	
1	0.44	0.88	0.49
2	0.65	0.88	0.35
3	0.65	0.88	0.60
4	0.78	0.87	0.58
5	0.53	0.88	0.67
6	0.42	0.88	0.45
7	0.47	0.88	0.35
8	0.31	0.89	0.48
9	0.57	0.88	0.63
10	0.59	0.88	0.48
11	0.45	0.88	0.38
12	0.55	0.88	0.39
13	0.41	0.89	0.61
14	0.60	0.88	0.08
15	0.65	0.88	0.67
16	0.33	0.89	0.26
17	0.60	0.88	0.33
Total Score:	Alpha = 0.89		0.72

## Purpose

To assess the validity and reliability of a modified Tampa Scale for Kinesiophobia for adolescents with Heart Disease (TSK-Heart-A)

## Sample Demographics (n=59)



## Conclusions

- The TSK-Heart-A demonstrated strong criterion validity and internal and test-retest reliability.
- Additional validity including a factor analysis with a large generalizable sample is warranted.

TSK-Heart-A PDF



References

