

CancerSupportSource™: Validating a Web-based Distress Screening Tool in the Community

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Introduction

- Cancer Support Community (CSC) represents a global network of non-profit, community-based organizations that provide professionally led support and education to cancer patients and their families.
- The IOM, the NCCN, and the American College of Surgeons Commission on Cancer have all recognized that screening for psychosocial concerns is critical to ensuring quality cancer care for the whole patient.
- Few tools have been validated in the community where up to 85% of cancer patients are treated.
- Since 2008, CSC has been investigating the feasibility and effectiveness of distress screening, referral, and follow-up in the community.
- In 2011, CSC began developing a sustainable model of integrated care with *CancerSupportSource*™
- CancerSupportSource (version 2.0) is a 25-item Web-based tool designed to screen patients for distress in the community and connect them to appropriate resources.
- The NCCN's Distress Thermometer (DT) is a widely used tool for measuring psychosocial distress.
- Individuals scoring ≥ 4 on the DT warrant further assessment and intervention for distress.

Study Objective

- Previously, CSC validated CSS against the FACT-G and CES-D and demonstrated moderate to strong reliability and validity.

- In the present study we compared CSS to the DT.

Study Design

Convenience sample of members from 10 CSC affiliates

- Phoenix
- Central New Jersey
- East Tennessee
- Pasadena
- Greater Lehigh Valley
- Miami
- Philadelphia
- Quad Cities (IA)
- San Francisco Bay area
- Cincinnati/ N. Kentucky

Table 1. Sample characteristics (n=251)

Sample Characteristic	n	%
Race/ethnicity		
Caucasian	204	87
African-American	6	3
Hispanic	12	5
Asian/Pacific Islander	9	4
Female	222	90
Education		
\geq Bachelors Degree	178	76
Annual Income $<$ \$40,000	36	15
Cancer Diagnosis		
Breast	108	46
Gynecologic	20	9
Colorectal	17	7
Blood	14	6
Time since diagnosis \geq 2 years	159	68
Active treatment within 2 years	144	64
Age (median)	57 years	

Results

Figure 1. Leading items on CSS marked as a somewhat to very serious concern

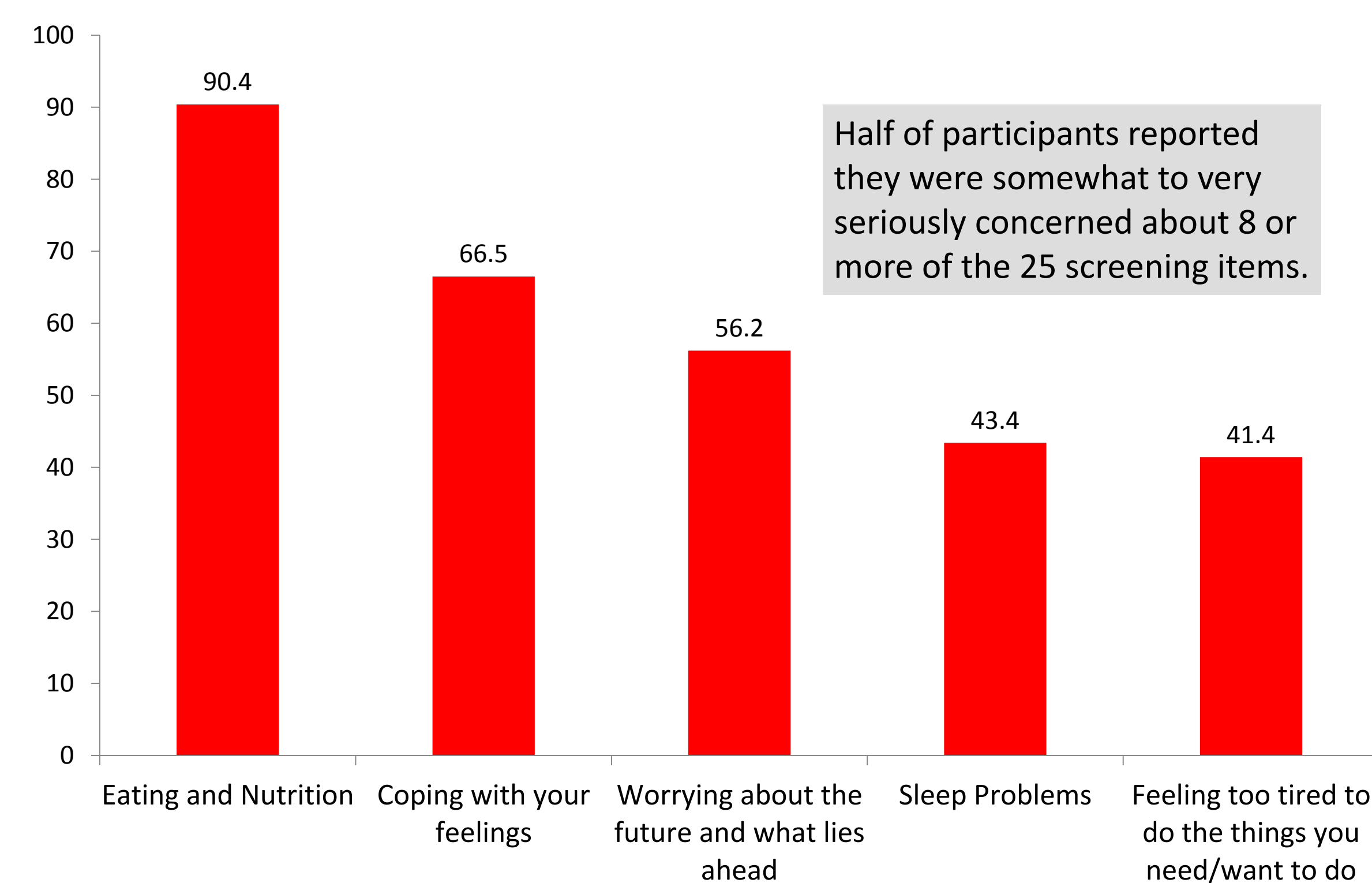


Figure 2. ROC curve using the DT (≥ 4) as the criterion (n=239). ROC analysis was used to explore the effect on sensitivity and specificity of the sum count of items rated ≥ 2 (area under curve=0.7951).

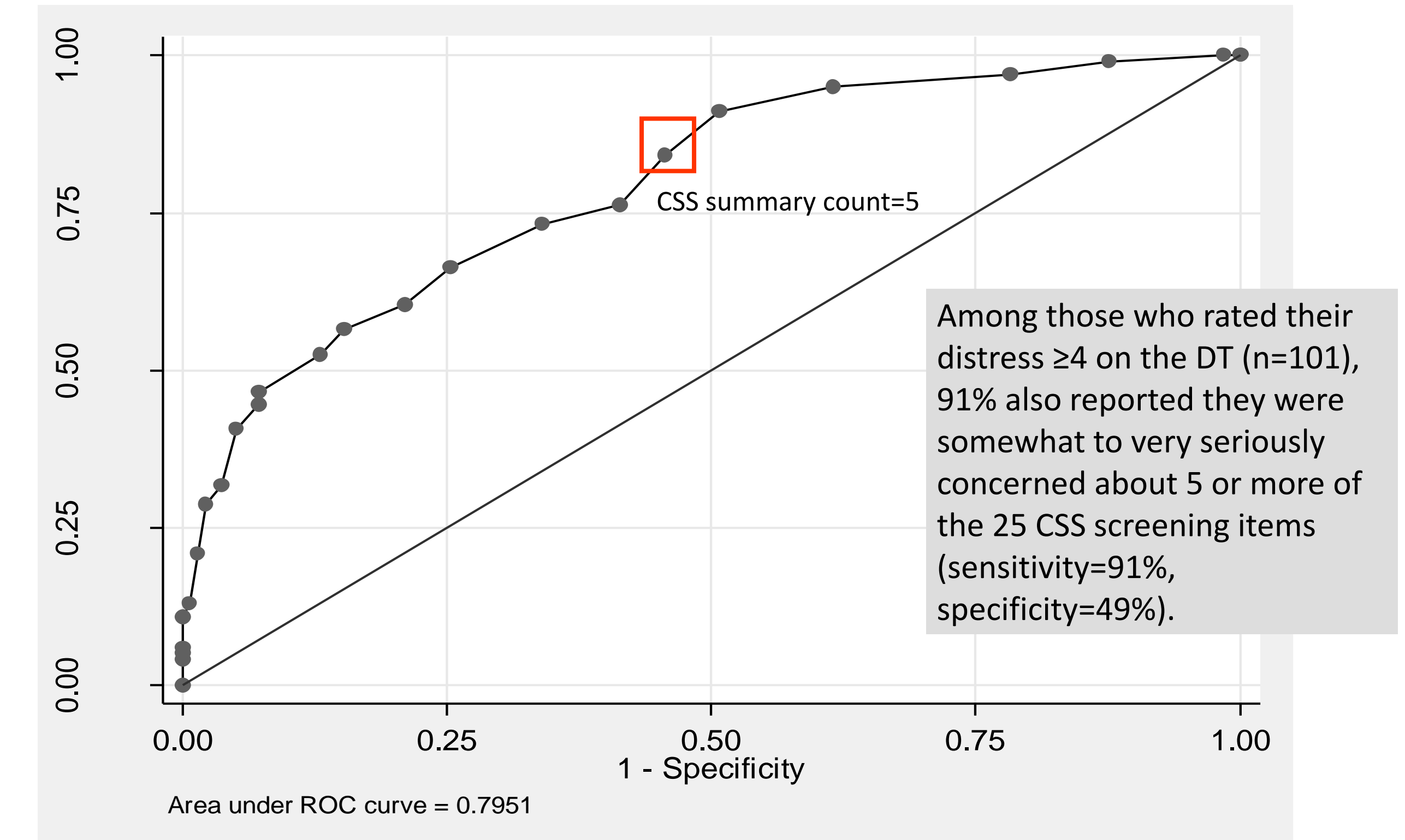


Figure 3. NCCN Distress Thermometer

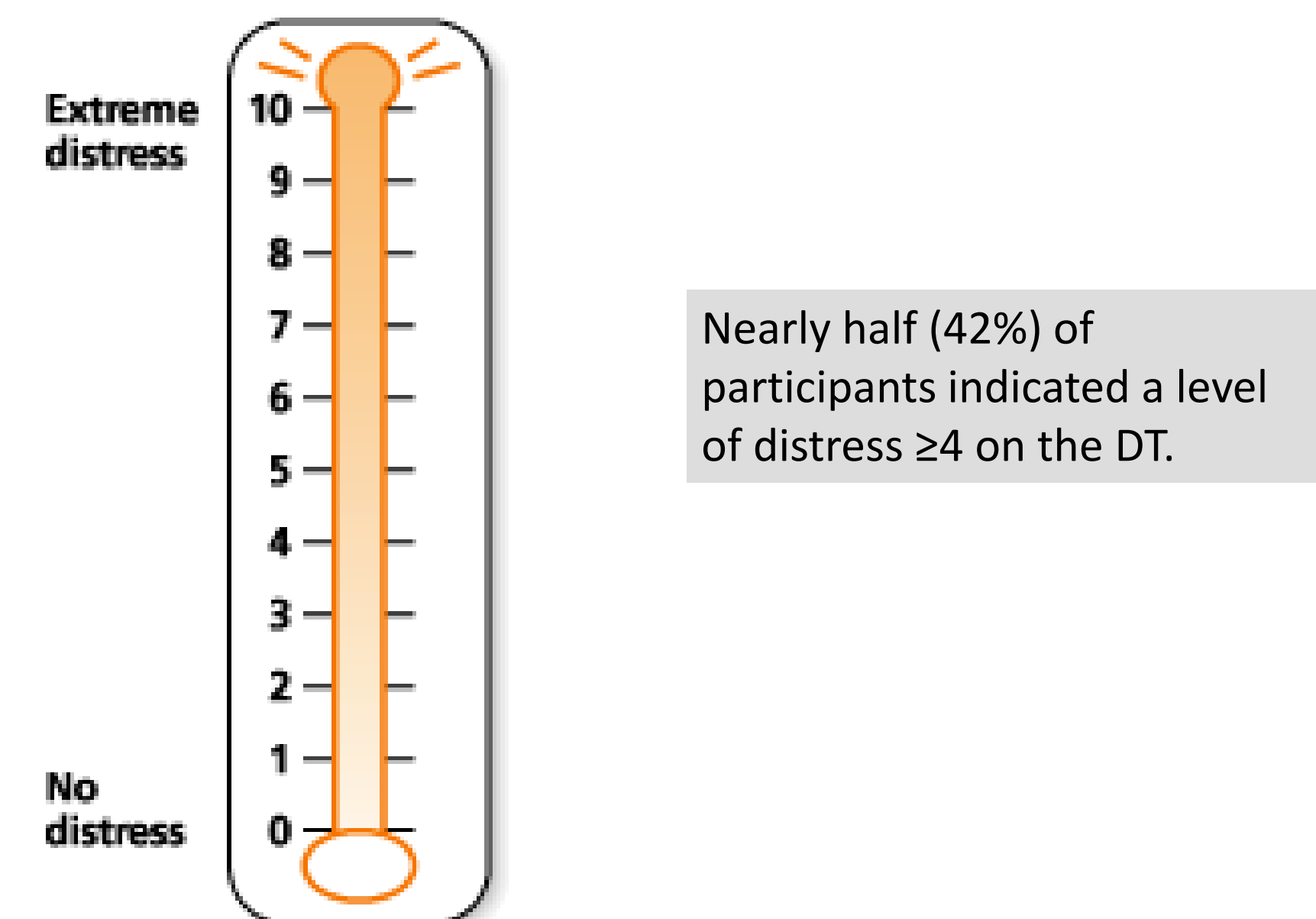


Table 2. Items on CSS most strongly correlated with the DT (n=239)

CSS item	R ²
Changes or disruption in work, school, or home-life	0.32
Feeling sad or depressed	0.29
Coping with your feelings	0.27
Worrying about the future and what lies ahead	0.25
Feeling too tired to do the things you need or want to do	0.25
Worrying about family, children, and/or friends	0.24
Feeling nervous or afraid	0.21
Feeling lonely or isolated	0.21
Pain and/or physical discomfort	0.20

R=Pearson correlation coefficient.

Note: Bonferroni-adjusted significance levels, $p < 0.001$, for all correlations.

Methods

- Participants completed an online survey that included *CancerSupportSource* 1.0 (CSS) and the Distress Thermometer (DT).
- A summary score (range 0 to 25) was calculated as the total count of CSS items rated ≥ 2 (somewhat to very seriously concerned).
- Receiver operating characteristic (ROC) curve analysis using the DT (≥ 4) as the criterion was used to explore the effect on sensitivity and specificity of the sum of count items rated ≥ 2 .

Conclusion and Implications

- CSS shows moderate to strong psychometric properties that can help screen for patients at high risk for distress and depression.
- Among those who rated their distress ≥ 4 on the DT (n=101), 91% also reported they were somewhat to very seriously concerned about 5 or more of the 25 CSS screening items (sensitivity=91%, specificity=49%).
- Rating 5 or more of the CSS items ≥ 2 can correctly identify the majority (91%) of patients that warrant further assessment and intervention for depression.
- Addressing the needs of patients at high risk for depression through appropriate screening, assessment, and intervention may lead to better patient-reported and cost outcomes.

Future Directions

- Test effectiveness and feasibility of CSS on a more diverse sample of survivors.
- Demonstrate the effectiveness of screening referral and follow-up on patient reported, quality, and cost-related outcomes (adherence, emergency room visits, missed appointments).
- Evaluate the implementation of the 25-item screening tool along with referral and follow-up.

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