CHA Cambridge Health Alliance — Division on **Addiction**

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Evaluating the Computerized Assessment and Referral System (CARS) screener: Sensitivity and specificity as a screening tool for mental health disorders among DUI offenders

The Computerized Assessment and Referral System (CARS) provides comprehensive mental health screening for driving under the influence (DUI) offenders, a population with elevated risk of mental health problems.

CARS screens for the presence of 14 mental health disorders in either a lifetime or past 12-month frame.

The Study

Sensitivity	Specificity	Positive Predictive Value (PPV)
The proportion of people **with a disorder** who screen positive for that disorder.	The proportion of people **without a disorder** who screen negative for that disorder.	The proportion of people who screen positive for a disorder that **actually have that disorder.**

To assess the sensitivity, specificity, and PPV of the CARS screener, we used two samples:

- A sample of DUI offenders in Massachusetts who completed both the screener and the full CARS assessment.
- Data from the National Comorbidity Survey Replication (NCS-R), a large general population survey that included both full diagnostic assessments and questions that we used in the CARS screener.

Key Findings

The CARS screener had good and similar overall psychometrics in both samples.

The Table shows results for lifetime diagnoses from the larger NCS-R sample. In that sample, the CARS screener had high sensitivity and specificity (>80%) for all disorders except dysthymia, panic disorder, and tobacco use disorder (not pictured).

Positive predictive value was particularly high for substance use disorders, but lower for anxiety and mood disorders.

CARS screener properties in the NCS-R sample: ➜

Disorder	Sensitivity	Specificity	PPV
Posttraumatic stress	100.0%	87.2%	47.9%
Panic	99.8%	62.4%	12.0%
Generalized anxiety	94.5%	81.0%	30.5%
Dysthymia	5.7%	96.5%	6.7%
Major depression	92.0%	87.8%	64.9%
Bipolar	100.0%	90.5%	33.1%
Alcohol use	99.1%	99.8%	98.9%
Drug use	99.8%	99.5%	96.8%

Key Takeaways

The CARS Screener offers a timely, sensitive, and specific method to screen for a variety of mental health and substance use disorders.

CARS

Though the CARS screener accurately detects issues related to panic, anxiety, and depression, it should be used to identify general areas of concern related to these disorders since its ability to differentiate between specific types of depression and anxiety is somewhat limited.

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