

Systematic review of screening tools and procedures to identify hazardous drinking and alcohol use disorders in adult attendees in emergency departments (ED)

Institute of
Psychiatry
at The Maudsley

KING'S
College
LONDON

Thomas Phillips¹, Simon Coulton² and Colin Drummond¹

¹ Addictions Department, Institute of Psychiatry, King's College, London, UK

² Centre for Health Service Studies, University of Kent, Canterbury, UK

Introduction

There have been a limited number of previous systematic reviews examining the accuracy of screening tools in ED. Those reviews that have been conducted have been limited in the scope of tools included. Additionally previous reviews have amalgamated different reference standards for hazardous drinking and alcohol use disorders making interpretation of the diagnostic accuracy of tools difficult.

Aim

This systematic review aims to compare the diagnostic accuracy of screening tools and procedures in identifying hazardous drinking and alcohol use disorders amongst adult attendees of emergency departments.

Method

The search strategy identified studies that recruited adults from English speaking countries receiving ≥ 1 screening procedure compared to a validated reference standard. A range of databases via OVIDSP were searched along with hand-searching key journals and checking reference lists from key citations. Data was extracted to examine sensitivity, specificity, positive predictive values (PPV) and negative predictive values (NPV). RevMan (v5.1) was used to calculate confidence intervals, and plot forest and summary receiver operator characteristic (SROC).

Results

3,264 citations were identified, with 96% (3,168) being excluded following review of titles/abstracts. 96 papers were reviewed and 8 were included in the review¹⁻⁸. Multiple reference standards were employed: hazardous drinking, harmful drinking/alcohol abuse, alcohol dependence, and combined categories.

Of the eight tests examined to identify harmful drinking/alcohol abuse (Fig.1) AUDIT, RAPS and TWEAK show acceptable sensitivity and specificity, with AUDIT having higher PPV scores (.59¹; .40³).

Nine tests were assessed to identify alcohol dependence (Fig.2) with acceptable sensitivity and specificity being found in AUDIT, CAGE, RAPS, RAPS-4 & TWEAK, with higher and similar PPV scores for AUDIT (.66¹; .41³), CAGE (.64¹; .44³) and RAPS-4 (.51⁴).

When procedures were compared to harmful drinking/alcohol abuse or alcohol dependence AUDIT performed better than other measures. When short-form tools CAGE, FAST, PAT and SASQ were examined compared to a standards for excessive alcohol consumption (Fig.3), FAST outperformed all other tests on sensitivity, specificity and PPV (.85⁵; .83⁶).

Conclusions

Caution needs to be applied to these results due to the limited number of studies and different reference standards used. These results differ from previous reviews in identifying AUDIT as consistently performing well across diagnostic categories and amongst the short-form tools FAST outperformed other tests.

Conflict of interest declaration

None. Mr Phillips is a registered PhD student with the Institute of Psychiatry, King's College, London and this systematic review was submitted as part of his MPhil/PhD.

References

- 1 Cherpitel CJ. (1995a) Screening for alcohol problems in the emergency department. *Annals of Emergency Medicine*. 26 (2) pp 158-66.
- 2 Cherpitel CJ. (1995b) Screening for alcohol problems in the emergency room: A rapid alcohol problems screen. *Drug and Alcohol Dependence*. 40 (2) pp 133-7.
- 3 Cherpitel CJ. (1998) Differences in performance of screening instruments for problem drinking among blacks, whites and Hispanics in an emergency room population. *J. Studies on Alcohol*. 59 (4) pp 420-6.
- 4 Cherpitel CJ. (2000) A brief screening instrument for problem drinking in the emergency room: The RAPS4. *J. Studies on Alcohol* 61 (3) pp 447-9.
- 5 Hodgson R, et al (2002) The Fast Alcohol Screening Test. *Alcohol and Alcoholism*. 37 (1) pp 61-6.
- 6 Hodgson RJ, et al (2003) Fast screening for alcohol misuse. *Addictive Behaviours*. 28 (8) pp 1453-63.
- 7 Patton R, et al (2004). The Paddington Alcohol Test: A short report. *Alcohol and Alcoholism*. 39 (3) pp 266-8.
- 8 Williams R, Vinson DC. (2001) Validation of a single screening question for problem drinking. *Journal of Family Practice*. 50 (4) pp 307-12.

Correspondence

Mr Thomas Phillips
CNO/NIHR Clinical Doctoral Research Fellow
Section for Alcohol Research, PO48
2nd Floor, 4 Windsor Walk
Addictions Department
Institute of Psychiatry
King's College London
4 Windsor Walk
London SE5 8BB
thomas.phillips@kcl.ac.uk

Fig 1. Summary ROC Plot of Screening tests v Harmful drinking/Alcohol abuse (ICD-10/DSM-IV)

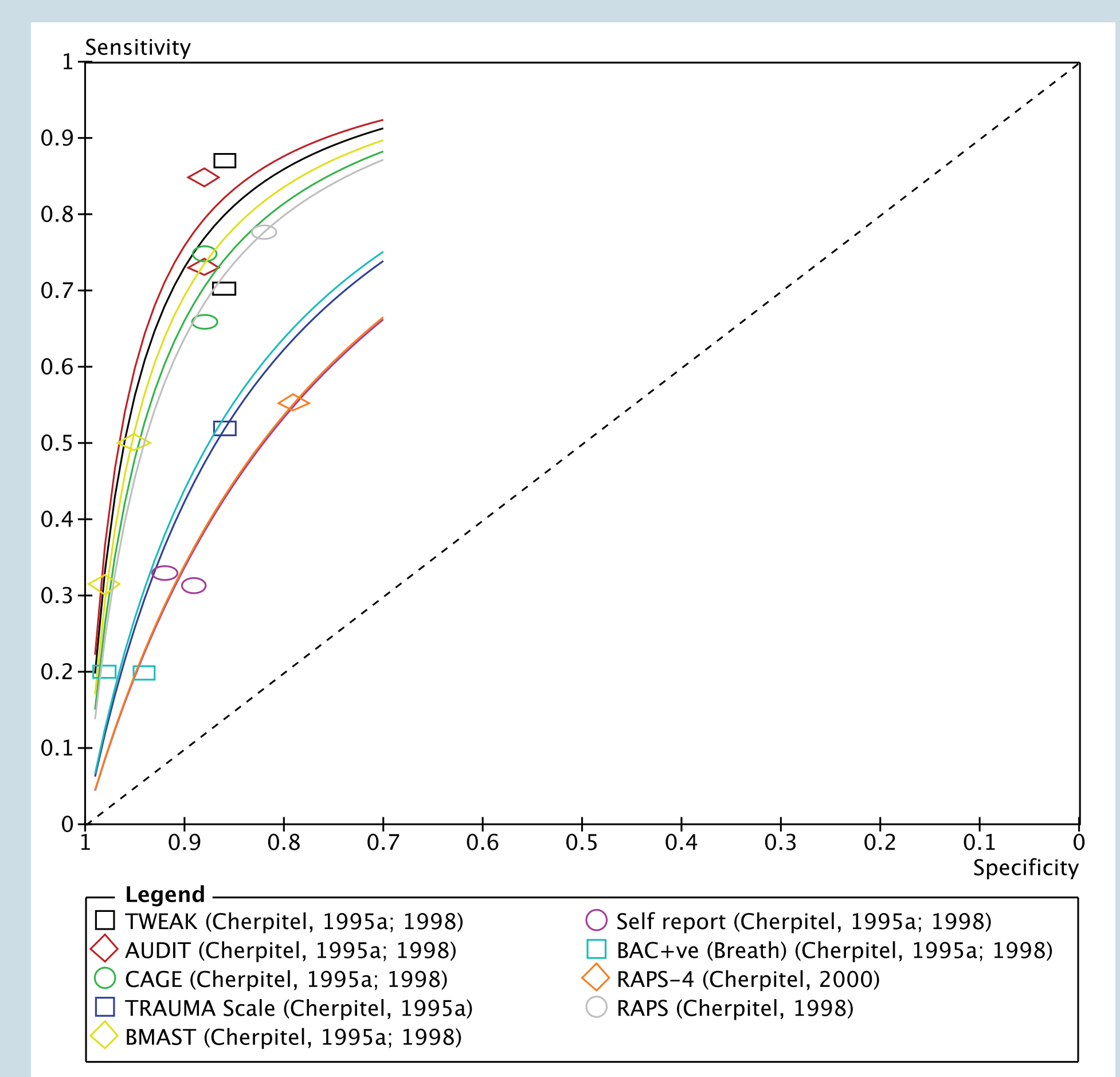


Fig 2. Summary ROC Plot of Screening tests v Alcohol dependence (ICD-10/DSM-IV)

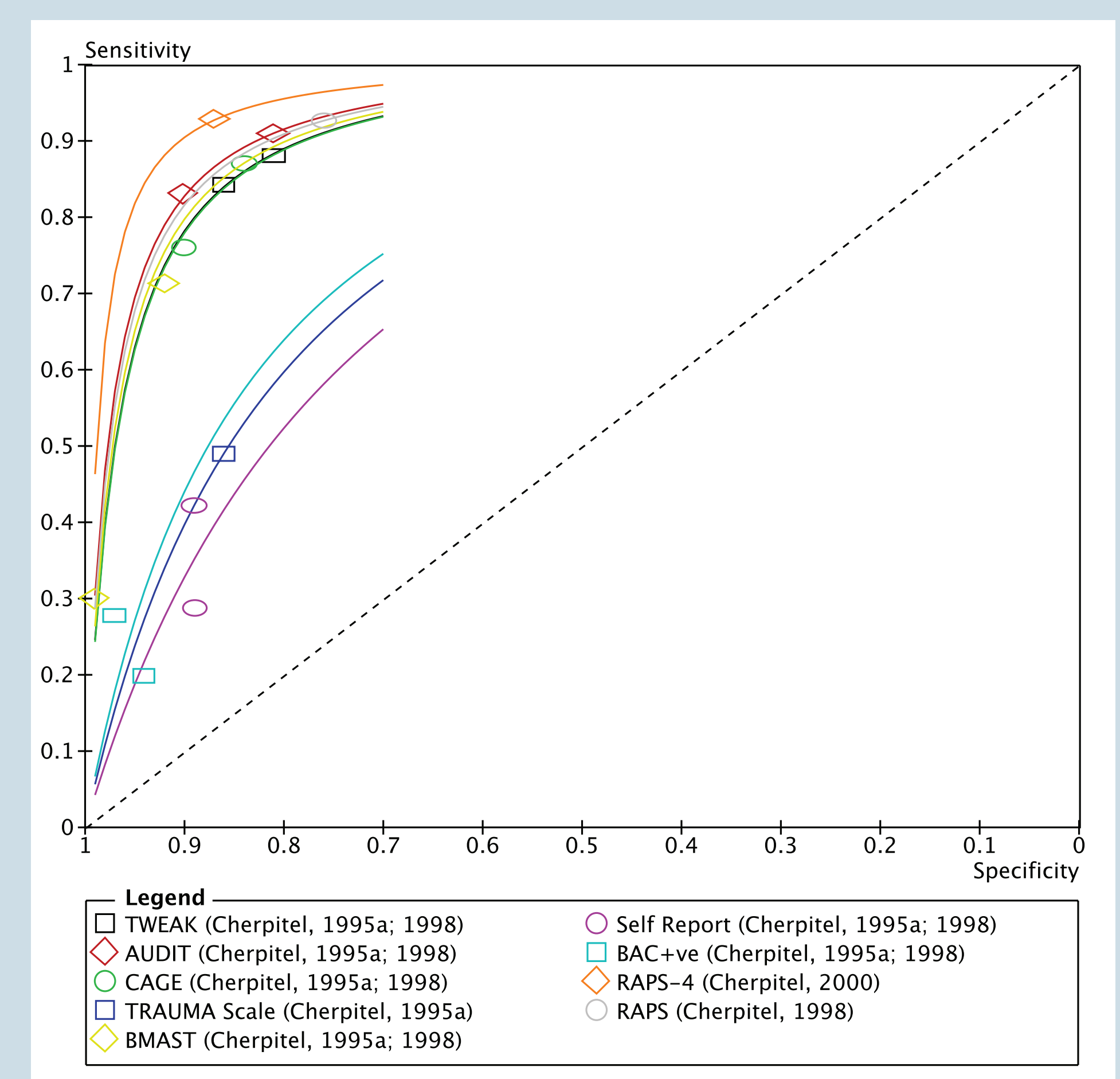


Fig 3. Summary ROC Plot of Screening tests v Excessive alcohol consumption (Hazardous/Harmful drinking, Alcohol abuse/dependence (TLFB, DSM-IV or AUDIT 8+))

