

Screening for Perinatal Depression using the CATMH™ in Urban-Dwelling African American and Hispanic Women



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Abstract

Background

- Approximately 12% of women experience perinatal depression (PND - depression during pregnancy and/or the postpartum)¹.
- Underserved minority women experience higher rates of PND, but lower rates of follow-up and referral for treatment².
- We implemented a computerized adaptive test (CAT-MH™), including a diagnostic screen for MDD (CAD-MDD) and a measure of severity of depressive symptoms (CAT-DI)³.

Aims

Aim 1: To measure rates and concordance of CAT-MH™ measures with PHQ-9 (cut-off ≥ 10) and determine clinical validity of cases by examination of medical records.

Aim 2: To compare rates of PND and depressive symptom severity on CAT-MH™ and PHQ-9.

Methods

- 229 women (47% Black, 29% Latina) from an urban university obstetrics outpatient clinic were evaluated using the CAT-MH™ and PHQ-9 up to 4 times during pregnancy and postpartum as part of a longitudinal study of perinatal mental health.
- Using CAD-MDD diagnosis as the true condition and PHQ-9 as the predicted condition, we classified women into four categories:

True Positive
(+PHQ9/+CAD-MDD)

True Negative
(-PHQ9/-CAD-MDD)

False Alarm
(+PHQ9/-CAD-MDD)

Miss
(-PHQ9/+CAD-MDD)

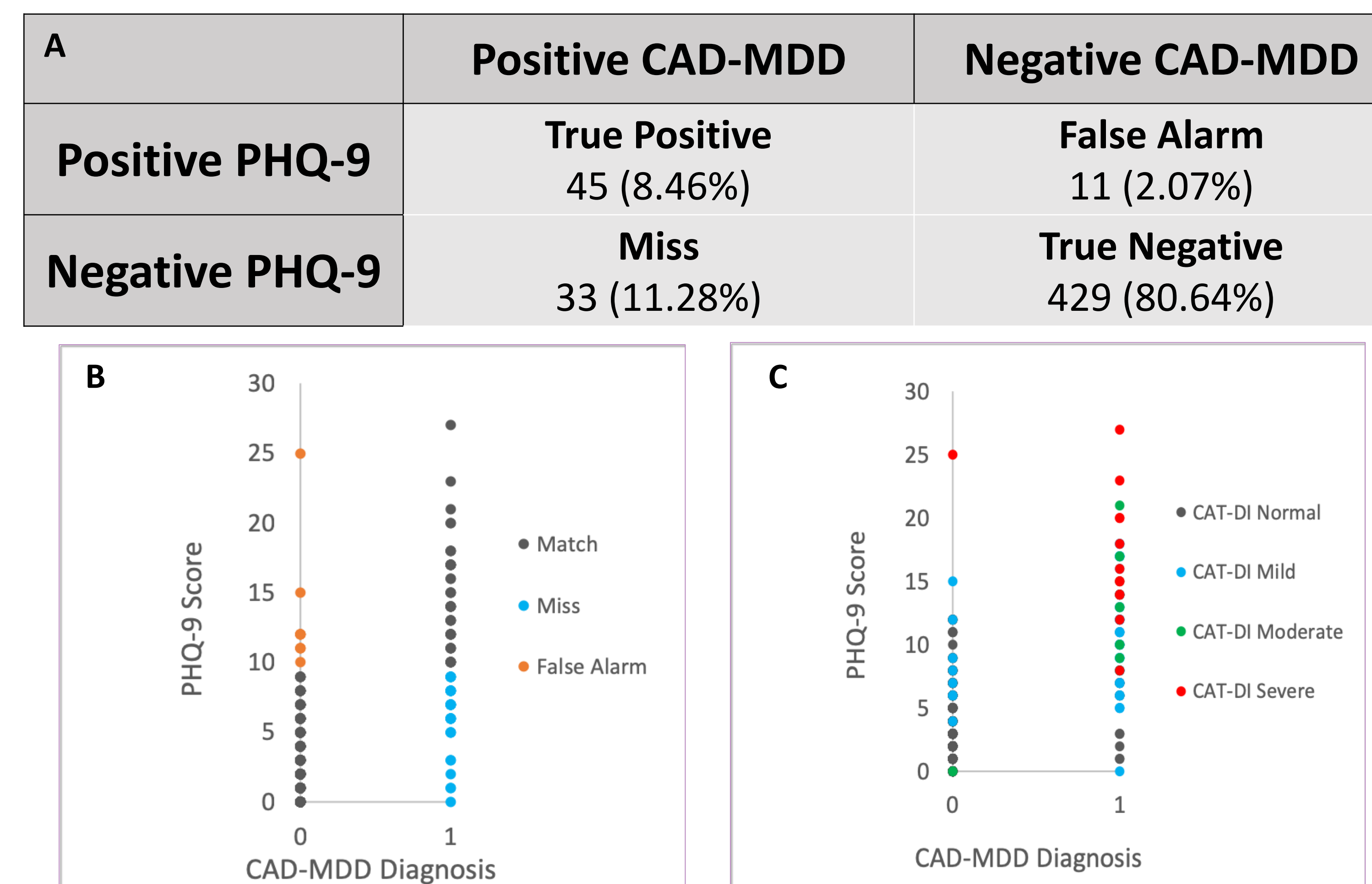
- We ran a series of chi-square analyses and linear models with predictors including income, education, relationship status, age, weight, trimester, desire for pregnancy, and insurance to predict “miss” cases. We also ran a series of spearman correlations.

Results

Table 1. CAD-MDD detected ~4% more instances of PND compared to the PHQ-9 in the total sample ($p=.05$) and the Black ($p = .12$) and Hispanic ($p = .6$) population.

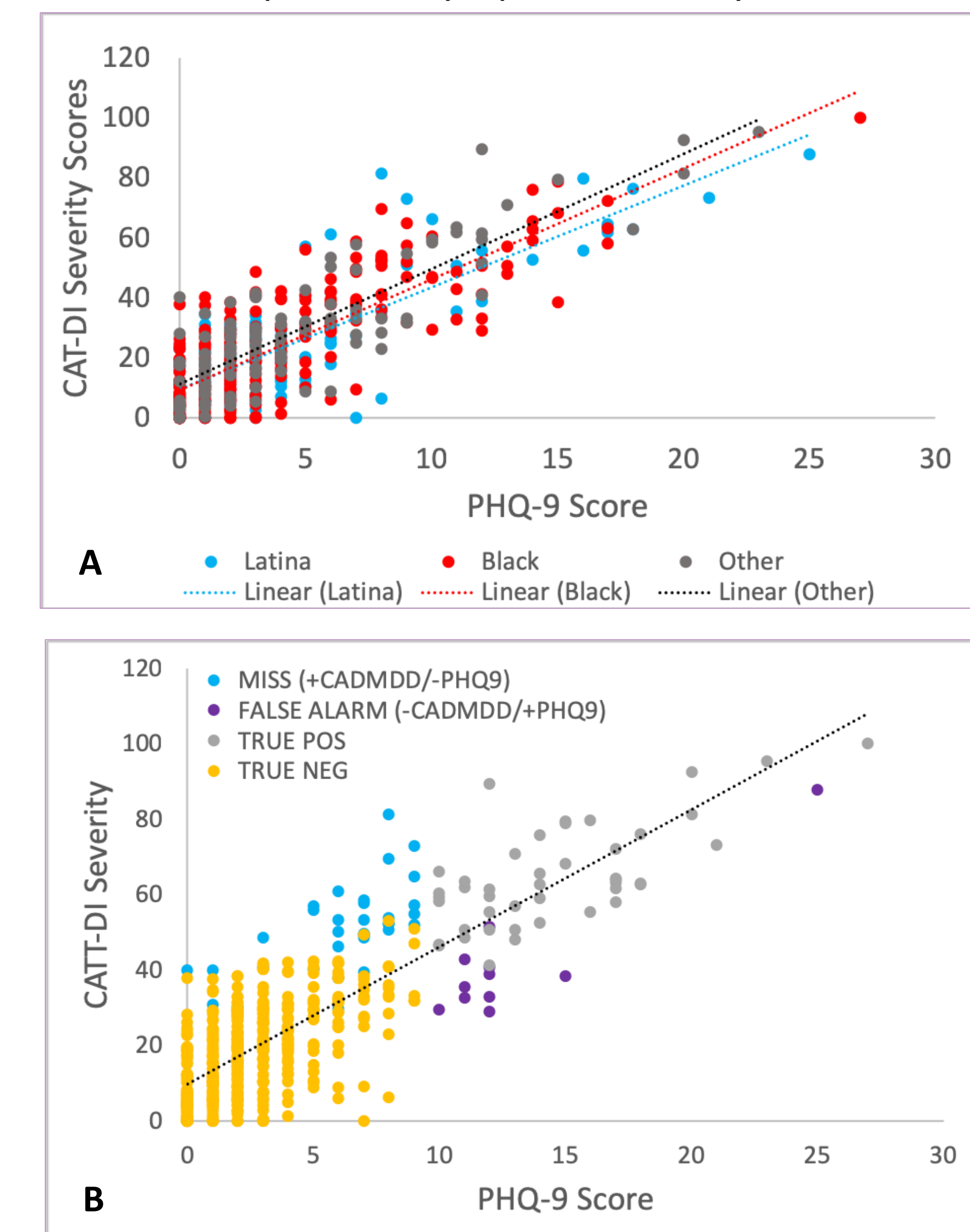
	Total sample PND Rate per Visit (532 visits)	African American PND Rate per Visit (254 visits)	Latina PND Rate per Visit (150 visits)
CAD-MDD	14.93%	15.35%	13.33%
PHQ-9	10.69%	10.24%	10.67%

Figure 1. True positive, true negative, miss, and false alarm cases including (a) the percentage of women in each category, (b) distribution across PHQ-9 scores and CAD-MDD, and (c) distribution of CAT-DI severity across PHQ-9 and CAD-MDD.



As a cursory evaluation of the validity of CAD-MDD, we examined medical records for notation of PND. Of the 33 “miss” cases, 21 were confirmed by social work, 2 were unconfirmed, and 10 were unavailable. PHQ-9 scores ($p = .003$), CAT-DI Severity ($p < .001$), and not having private insurance ($p = .03$) significantly predicted misses. The majority of these cases had a low PHQ-9 score and a mild CAT-DI severity score.

Figure 2. Comparison of PHQ-9 total scores and CAT-DI depressive symptom severity scores.



CAT-DI severity and PHQ-9 scores were significantly correlated in both the (a) total sample ($r = 0.74$, $p < .001$) and the (b) African American and Hispanic population ($r = 0.73$, $p < .001$).

Conclusions

- CAD-MDD detected ~4% more instances of PND compared to the PHQ-9 in a sample consisting of a high percentage of African American and Hispanic women.
- Most cases of PND detected by CAD-MDD alone were mild cases with PHQ-9 scores nearing the cut-off of 10.
- Medical records confirmed diagnosis in 21 cases, disconfirmed in 2, and 10 did not have available clinical notes. This finding serves to confirm the sensitivity of the CAT-MH in detecting cases of PND over the PHQ-9.
- Implementation of the CAT-MH as part of routine prenatal clinic care could serve to remedy the health disparity in referral and diagnosis of PND in the clinical setting, as minority women are often under-referred and under-diagnosed.
- A validation study including diagnostic interviews to determine whether the CAT-MH is detecting true positive versus false negative results is underway.

References

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