

## Predictors Of Changes In Depressive Symptoms Among Persons Living With HIV

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**Objective:** To assess the baseline predictors of baseline depressive symptoms and multi-level change (between-person and within-person) in symptoms over time, among persons living with HIV (PLWH).

**Background:** Depression is the most common psychological illness among PLWH. It is not clear how depressive symptoms change overtime, and what predictors are associated with overall and individual-level changes in symptoms. Using the Bio-Psycho-Social model, we hypothesized that several socio-demographic, clinical, and HIV-related variables would be associated with baseline depressive symptoms and changes in symptoms overtime.

**Methods:** The Multicenter AIDS Cohort Study (MACS) and Women's Interagency HIV Study (WIHS) cohorts were utilized to assess changes in depressive symptoms across 10-years. The Centers for Epidemiology Depression Scale was use to assess depressive symptoms. Linear mixed models were used to assess Level 1 (within-individual) and Level 2 (between-individual) predictors of change in depressive symptoms, by cohort. All analyses controlled for wave of enrollment, percent missing, and censorship due to death.

**Results:** Number of drinks per week (WIHS  $b=0.12$ ,  $SD=0.04$ ,  $p<0.01$ ; MACS  $b=0.03$ ,  $SD=0.01$ ,  $p<0.05$ ), illicit drug use (WIHS  $b=3.67$ ,  $SD=1.01$ ,  $p<0.001$ ; MACS  $b=1.84$ ,  $SD=0.37$ ,  $p<0.001$ ) and receipt of mental health services (WIHS  $b=3.33$ ,  $SD=0.39$ ,  $p<0.001$ ; MACS  $b=2.60$ ,  $SD=0.39$ ,  $p<0.001$ ) were associated with increased depressive symptoms at baseline in MACS and WIHS. Lower baseline depressive symptoms were associated with high school or greater education ( $b=-2.60$ ,  $SD=0.68$ ,  $p<0.001$ ) and CD4 count  $> 200$  cells/mm<sup>3</sup> ( $b=-1.79$ ,  $SD=0.50$ ,  $p<0.001$ ) in WIHS only, viral load suppression ( $b=-0.90$ ,  $SD=0.24$ ,  $p<0.001$ ) in MACS only, and ART adherence  $>95\%$  (WIHS  $b=-0.93$ ,  $SD=0.35$ ,  $p<0.01$ ; MACS  $b=-1.81$ ,  $SD=0.58$ ,  $p<0.01$ ) in both cohorts. In MACS, a history of depressive symptoms ( $b=-0.14$ ,  $SD=0.06$ ,  $p<0.05$ ) was associated overall decreased depressive symptoms over time. In MACS and WIHS, a history of depressive symptoms (WIHS  $b=0.37$ ,  $SD=0.15$ ,  $p<0.01$ ; MACS  $b=0.09$ ,  $SD=0.05$ ,  $p<0.05$ ) and illicit drug use (WIHS  $b=0.58$ ,  $SD=0.31$ ,  $p<0.05$ ; MACS  $b=0.16$ ,  $SD= 0.05$ ,  $p<0.001$ ) were associated with within-person rate of increased depressive symptoms overtime.

**Conclusions:** Clinicians should consider screening patients for current depressive symptoms if patients report a history of depressive symptoms, alcohol use, or illicit substance use. Access to mental health services may be warranted to ensure optimal ART adherence, viral load suppression, and increased CD4 count.

**\*\*Remember: Total word count for the *full* abstract is no more than 350 words.**

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Depressive symptoms and alcohol use have been intrinsically related in the general population. The current research provides evidence that alcohol use is associated with long term depressive symptoms among persons living with HIV.

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