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Effects of Age, Sex and Race on Substance Abuse and Dependence Assessments

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Background: Substance abuse and dependence are often assessed using the Structured Clinical Interview for DSM-5 (SCID), which has been used in the National Survey of Drug Use in Households (NSDUH). This survey is typically administered to over 50,000 US participants every other year, and processed symptom data are made publicly available. It is not clear whether these symptom items operate identically across different demographic groups, yet this is essential information to have before differences in diagnostic rates can be accurately interpreted.

Rationale: Item responses should only be aggregated for group comparisons if items operate equivalently. We aim to test measurement equivalence for SCID substance abuse and dependence assessments.

Hypothesis: Sex, age and race are all likely sources of differential influence when assessing abuse and dependence.

Results: For marijuana abuse and dependence, SCID substance abuse (4) and dependence (6) items showed substantial departures from measurement equivalence. Especially notable are differential race and sex effects for adverse legal consequences of substance use, though other items also show significant measurement non-invariance.

Conclusion: It would be better to also consider individuals' assessments compared to their peer groups, rather than to exclusively focus on a one-size-fits-all diagnostic metric. We provide software for calculating substance abuse and dependence liability scores, given item data and their age, sex and race. Thresholds on the continuum of liability may then be used for diagnostic or intervention purposes, akin to, e.g., lipid levels in cardiovascular health.