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Using brain imaging to detect substance use disorders by drug category; ROI's; Axes I and III diagnoses and corollaries of cognitive deficits

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Recent work in brain imaging in addiction has yielded promising findings. Unfortunately, studies have used small sample sizes, have not calculated a priori power, have not run distribution analyses; not met acceptable assumptions for their respective statistical techniques and because of not having adequate sample sizes have not employed multivariate analyses which have consequently not produced conclusive results. First, an epidemiological view of addiction vis a vis prevalence and incidence will be reviewed for context. Second, an overview of Neuro-imaging in Addiction will be discussed by a review of brain-imaging techniques, study methods and results. Third, the preliminary results of a current brain-imaging study in addiction undertaken by a collaborative between Dr. Karen Dodge at the Caron Treatment Corporation; Dr. Vincent Calhoun at the University of New Mexico: Albuquerque: Mind Research Network and Dr. Paul Kenny at the Scripps Research Institute will be presented. Fourth, the ensuing bio-marker of addiction will be discussed, as a neurobiological understanding of the underpinnings of addiction might assist in the development of novel therapeutics and interventions.

Biography

Dodge is the director of Research at Hanley Center in West Palm Beach, Florida, Research Faculty at the Florida Atlantic University's Schmidt School of Medicine, Voluntary Associate Professor at the University of Miami: Miller School of Medicine; Department of Epidemiology and Public Health and Clinical Professor in the College of Osteopathic Medicine at NOVA Southeastern University, Broward, Florida. Dr. Dodge has published in numerous peer-reviewed journals; most recently, Journal of Drug Issues (2012), Journal of Substance Abuse Treatment Prevention and Policy (2011), the Journal of Substance Abuse Treatment (2008), and John's Hopkins Journal of Health for the Poor and Underserved (2009). Dr. Dodge has conducted and published pioneering studies in the specific areas of: *The Effectiveness of Female-Sensitive Substance Treatment as Compared to Traditional Mixed Gender Models, The Impact of Therapist-Client Congruence on Chemical Dependency Treatment Outcomes and Why HIV+ Women of Color Who are Substance Abusers and Aware of their HIV Status elect not to seek Primary Health Care or Substance Abuse Treatment.* This work has yielded ground-breaking changes in treatment delivery for Chemically-dependent females as evidenced by a local provider; the Orchid's treatment procedures. Currently, Dr. Dodge is the Co- PI of a Five-year Study collaborating with University of Miami; Scripps Research Institute and the University of New Mexico: Albuquerque: Mind Research Network to examine the interface between Non-coding RNAs and Brain images (SPECT scans) to diagnose addiction and develop novel therapeutics to address such diagnoses. Finally, these blood-borne bio-markers and SPECT images are being explored as prognosticative tools to predict relapse.