

Research links addictive behavior to personality, psychopathology

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Substance use disorder (SUD) includes dependence syndromes and harmful use of illicit drugs and alcohol. SUD is often complicated by a repetitive pattern of abstinence-reinstatement and psychiatric

comorbidities. The personality traits of people with SUD may also be factors contributing to continuous use of substances. It is plausible that SUD reflects a complex interplay between substance use, dependence features, clinical symptoms and personality traits.

The relationship between substance use and clinical symptoms can be directional in nature. For instance, drug-induced or withdrawal-induced clinical symptoms are well recognized. On the other hand, some theorists suggest that clinical patients may use substances as a form of "self-medication." Such a complex relationship between SUD features and symptoms and personality is best examined using [network analysis](#). However, relatively little research has examined this relationship.

To address this issue, Dr. Raymond Chan from the Institute of Psychology of the Chinese Academy of Sciences, together with Dr. Simon Lui at the University of Hong Kong, and Drs. J Poon and Lam Ming at the Castle Peak Hospital, recruited 391 treatment-seeking SUD patients and measured substance use, dependence features, clinical symptoms and [personality traits](#) using well-validated scales.

Network analysis was applied to construct a regularized partial correlation network and to estimate centrality indices such as strength, closeness, betweenness and expected influence. Furthermore, the relative importance of each node was estimated, with substance use and severity of dependence features as the dependent variables.

The results showed a highly interconnected, regularized partial-correlation network. The predictability index suggested that the regularized partial-correlation network was "self-sustaining."

Moreover, neuroticism, a [personality trait](#), showed highest closeness index. Depressive symptoms, anxiety symptoms and "general" symptoms in the Positive and Negative Syndrome Scale showed the highest

expected influence.

Regarding the relative importance analysis results, the [depressive symptoms](#), anxiety symptoms and 'general' symptoms significantly determined the variance of drug use and dependence severity.

Taken together, depressive and [anxiety symptoms](#) appear to be possible intervention targets to break the self-sustaining system of SUD.

Dr. Chan and his collaborators are planning to conduct follow-up assessments on this cohort and investigate the temporal stability of the regularized partial-correlation network, and to include more refined measures on reward learning to see if cognitive dysfunctions as such could also be useful intervention targets.

This study was published online in *International Journal of Mental Health and Addiction* on Dec. 1.

More information: Johannes Y. K. Poon et al, The Interplay Between Addictive Behaviour and Psychopathology and Personality in Substance Use Disorder: a Network Analysis in Treatment-Seeking Patients with Alcohol and Drug Use, *International Journal of Mental Health and Addiction* (2022). [DOI: 10.1007/s11469-022-00976-x](https://doi.org/10.1007/s11469-022-00976-x)

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