INTRODUCTION

Addiction is a chronic condition with many public health impact. Quality of diagnostic criteria is important to allow early detection and facilitate access to treatment.

The current DSM 5 Substance Use Disorder (SUD) criteria have good validity

Item Response Theory (IRT) analysis provides important advantages in understanding item behavior (Embretson et al. 2000), and indicated a valuable addition of craving in clinical sample (Kervran et al. 2019, Chung et al. 2012)

Some of the diagnostic criteria had different prevalence across treatment context and use, suggesting a differential criteria functioning.

Further studies are needed to test the validity across clinical practices, context of use and treatment (Cherpitel et al. 2010)

We chose harm reduction program (HR) participants to model subjects with significant probability of having a substance use disorder, actively engaged in use, recruited outside of an clinical treatment environment.

OBJECTIVE

To test the differential criteria and SUD functioning for alcohol, opiates, cocaine, cannabis and tobacco use by treatment environment: substance users recruited in outpatient addiction clinic (TX) vs harm reduction program (HR)

METHODS

Participants

| TX participants from ADDICTAUQ cohort, Bordeaux, France, including:  |
| -- Substance users seeking treatment |
| -- Recruited in French outpatient addiction clinics at their treatment entry |
| -- At least one diagnosis of a SUD |

| HR participants from COSINUS cohort, Bordeaux, France, including:  |
| -- Regular substances users |
| -- Recruited in Harm reduction program |
| -- Injected at least once during the last month |

Procedure

Face-to-face research interviews by a trained interviewer

Measures

-- MINI (Mini International Neuropsychiatric interview) for 11 DSM-5 SUD criteria
-- ASI (Addiction Severity Index) for sociodemographic (age, gender) and substances use

Statistical Analyses

Analyses conducted separately for each substance among current users (at least 2 times per week during 12 months)

Dimensionality & Item Response Theory (IRT) models:

- fit a one-factor Confirmatory Factor Analysis (CFA), based on the root mean square error of approximation (RMSEA ≤ 0.06) and fit indices (CFI/TLI ≥ 0.95)
- 2-parameter logistic IRT model to all 11 criteria of DSM-5 SUD: Estimate difficulty and discrimination criteria parameters (Hu et al. 1999)

Differential Item & Test Functioning (DIF/DTF):

- Multiple indicator multiple cause (MIMIC) structural equation models to test for DIF by treatment environment: each criterion set was modeled as a latent variable indicated by the 11 criteria and regressed on treatment environment (TX vs HR) age, gender, level of education, and poly-addiction
- DTF (average difference in the expected number of criterion for individuals with the same trait severity in different subgroups) by treatment environment (HR vs TX)

RESULTS

DSM-5 Current Substance Use Disorder

The prevalence of SUD was very high for each substance among current regular users: alcohol 93%, opiates 98%, cocaine 92%, cannabis 92% and tobacco 89%

Dimensionality & IRT:

- Unidimensionality is confirmed, good fit indices and factor loading for alcohol, cocaine, opiates, and cannabis, but not for tobacco
- Craving criterion:
  - loads more strongly (alcohol: 0.83; opiates: 0.84; cocaine: 0.90, cannabis 0.82 and Tobacco: 0.77) than any other criteria
  - has one of the lower difficulty (high frequency) & higher discrimination than other criteria among the 5 substances

DIF & DTF by treatment environment (HR vs TX)

- No DIF was identified for “craving”, “Large amount”, “time spent”, “tolerance” and “activities given up” criteria by treatment environment
- Some items do show DIF, overall this is not expected to change a diagnosis (the DTF < 1) for cannabis, cocaine and tobacco (for all four covariates) between HR and TX

- For opiates and cannabis, DTF was slightly >1 by treatment environment

CONCLUSION

- Craving criterion showed high prevalence, low difficulty and high discrimination: potential usefulness as an early indicator of SUD
- The criteria of loss of control dimension of SUD had similar functioning by treatment environment for alcohol, opiates, cocaine and tobacco: except for “quit/control” criterion
- HR participants were more severe for opiates use disorder, than TX patients, without specificities on criteria endorsement (no DIF)
- DIF seems to impact the total expected number endorsed cannabis criteria

No significant DIF across context of addiction treatment, indicating that “craving” criterion is very specific and stable among problematic substances users regardless the context of use and treatment

Financial Support: French Government Addiction Agency MILDECA, Foundation Bordeaux University