



# Modeling the latent structure of cannabis use disorders: Evidence from an Australian population sample



Tim Slade<sup>1</sup>, Rachel Grove<sup>1</sup>, Orla McBride<sup>2</sup>

1. National Drug and Alcohol Research Centre, University of New South Wales, AUSTRALIA; 2. Department of Epidemiology, Michigan State University, USA

**INTRODUCTION**

- Cannabis Use Disorders (CUDs) are clinically heterogeneous<sup>1</sup>.
- This variation between cases may hamper efforts to identify risk factors, evaluate treatment and predict prognosis
- Latent variable analyses can help to identify homogeneous groups of people
- Past focus has been on identifying optimal numbers of latent factors or latent classes with conflicting results<sup>2, 3</sup>.
- Newer techniques (factor mixture modeling<sup>4</sup>) examine the fit of meaningful combinations of factors and classes

**METHODS**

- Factor mixture modeling was carried out on self-reported symptoms of CUDs
- Data came from the 2007 National Survey of Mental Health and Wellbeing, a large epidemiological survey of psychiatric disorders in the adult population<sup>5</sup>. (n=8841, aged 16-85)
- Symptoms were collected with the World Mental Health version of the Composite International Diagnostic Interview
- A sub-sample of lifetime cannabis users were analyzed (n=1639)
- 10 different models were fit (see below)

**RESULTS**

- While the two factor (abuse dependence) FA model fit best the correlation between factors was extremely high (0.921)
- The three class LCA fit best with classes defined largely by different rates (but not patterns) of symptom endorsement
- There was inconsistency in the evidence for the best fitting FMM model
- Some fit indices pointed to the FMM model with three classes and a single (severity) factor within each class
- Others pointed to the model with one zero class and a single (severity) factor

**DISCUSSION**

- When comparing all models together a simple unidimensional model was the best fit to the data
- Mixture models did not provide a superior conceptualization
- However, mixture models mean researchers are no longer forced to choose between purely dimensional and purely categorical models

1. McBride, O. et al. (in press). *Journal of Studies in Alcohol and Drugs*  
 2. Blanco et al. (2007). *Drug and Alcohol Dependence*  
 3. Compton et al., (2009). *Drug and Alcohol Dependence*  
 4. Lubke, G. & Muthen, B. (2005). *Psychological Methods*  
 5. Slade, T. et al. (2009). *Australian and New Zealand Journal of Psych*  
 6. Masyn, K. et al. (2010). *Sociological Development*

