To study the influence of symptom experience and clinical markers on a multidimensional Health-Related Quality of Life (HRQL) questionnaire specific to HIV using sparse PLS regression and Canonical Correlation Analysis (SGCCA).

**Methods**

Self-reports were collected during the VESPA2 national survey [1] and included three blocks of data: the 7-dimension PROQOL-HIV questionnaire [2], a 22-symptom checklist [3], and 21 binary indicators about clinical status. Data were analysed using bootstrapped sparse PLS (HRQL and symptoms only), and SGCCA (three blocks). Model hyper parameters (number of components, α, and L1 penalty, λ) were tuned using 20 x 5-fold cross-validation. Model-based clustering of individual factor scores was used to build a ‘typology’ of the VESPA2 patients.

**Results**

Complete data for HIV+ patients (N=1524) for all three blocks were considered in this analysis: 77% men, mean age 47 years, 51% men having sex with men, 80% with undetectable HIV viral load.

Sparse PLS (λ=0.6) and SGCCA (λ=0.7) retained the same number of symptoms, including anxiety, depression, fatigue and sleep disorder. Gender (loading 0.5), sexual transmission (0.3), and chronic C hepatitis (-0.3) had the highest loading on relevant dimension of PROQOL-HIV and were selected by the SGCCA algorithm.

Symptoms appeared more related to HIV quality of life in comparison to clinical markers. Intimate Relationships, Health Concerns were the most affected dimensions of PROQOL-HIV.

**Conclusion**

Using sparse multi-block modelling of HRQL, symptoms and clinical markers allows studying both variable relationships and individual profiles of HIV+ patients in the VESPA2 study. This approach should be helpful to better understand patient’s response or adherence to cART, but more work is needed to implement proper cross-validation scheme in such multi-block settings.

**References**

