Cognition, Mood and Quality of Life in 706 HIV+ Men in Canada

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I have no conflicts of interest to disclose
Background
Quality of life has always been central to persons with HIV

- Several cohort studies have reported high rates of mild cognitive impairment
- The role that cognition plays in contributing to QOL, in the presence of multiple other factors (especially mood symptoms), remains to be clarified.
Research objective

- To estimate the extent to which cognition, mood and other clinical factors influence QOL in Canadian men aging with HIV.
Methods
Positive Brain Health Now cohort study

- Understand the **determinants and consequences** of poor brain health among aging HIV+ individuals in Canada

- Eligibility criteria:
  1. ≥35 years old
  2. HIV + at least 1 year

- Study visit every 9 months
  - Medical information
  - Cognitive tasks
  - Questionnaires

*N Mayo et al. BMC Neurology, 2016, 16:8*
Assessing the life impact of HIV: the Wilson-Cleary model
Who is in the Brain Health Now cohort?

- N = 840
- 84% men
- Mean age 53 y

Working: ~43%

Biological Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of HIV (mean/SD)</td>
<td>17 (8) years</td>
</tr>
<tr>
<td>Nadir CD4 cell count (mean/SD)</td>
<td>218 (212) cells/mm³</td>
</tr>
<tr>
<td>Current CD4 count (mean/SD)</td>
<td>623 (275) cells/mm³</td>
</tr>
<tr>
<td>AIDS defining illnesses (ADI)</td>
<td>55%</td>
</tr>
</tbody>
</table>

...and who is not in the cohort?
- dementia, other neurological condition
- younger
- working, “too busy”
- much lower on cognitive symptoms
Variables of interest and statistical analysis

Structural Equation Modeling (SEM) to identify the inter-relationships between variables
- Requires a large sample
- $\Rightarrow$ analysis restricted to men ($N=706$)
Variables of interest

Symptoms
- HIV S&S
- Pain
- Fatigue
- Motivation
- Sleep
- Anxiety
- Depression
- Cognitive tasks

Activity
- Physical function
- Meaningful activity

Participation
- Emotional role
- Physical role
- Social role

Function status

B-CAM: Measured cognition - calibrated (measure change) - brief

PDQ: how often
- Trouble getting things organized
- Forget to take medication
- Forget appointments

HP: Rate health/satisfaction with health
QOL: Rate your quality of life

Health interferes with usual activities
Results
Direct paths to quality of life

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HP ➔ QOL ➔ HP
Indirect paths to quality of life - through HP

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HP

QOL
Indirect paths to quality of life: through participation

**Symptoms**
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**Activity**
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**Participation**
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HP → QOL
Indirect paths to quality of life - through activity

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HP
QOL
Performance on cognitive tasks has no **direct** impact on participation and QOL.

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HP → QOL

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**Motivation**

Performance on cognitive tasks has no direct impact on participation and QOL.
Conclusions
Impact of brain health on QOL

- Model explained 89% of the variance in QOL
- Largest effects:
  1. Depression
  2. Fatigue
- Among HIV+ aging Canadian men free from dementia, cognitive performance only impacts on function and QOL in the presence of cognitive symptoms.
Q & A

Discussion
How many participants had HAND?

**Biological**
- Years HIV
- Co-morbidity
- Current CD4
- ADI
  - Nadir CD4 < 200

**Symptoms**
- HIV S&S
- Pain
- Fatigue
- Motivation
- Sleep
- Anxiety
- Depression
- Cognitive tasks
- NP testing N=260

**Activity**
- Physical function
- Cognitive symptoms
- Meaningful activity

**Participation**
- Emotional role
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- Social role

HP QOL
Cognitive symptoms do not traditionally map strongly to HAND ... but they map to function and QOL

Askari S et al. Development of an Item-Pool Reflecting Cognitive Concerns Expressed by People with HIV. American Journal of Occupational Therapy, in press.
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