Healthcare-Associated Direct Costs of Mental Health Disorders among People Living with HIV in British Columbia, Canada

Viviane D. Lima,[1] Hiwot Tafessu,[1] Martin St-Jean,[1] Kalysha Closson,[1] Thomas L Patterson,[2] Ruth Lavergne,[3] Robert S. Hogg,[1] Rolando Barrios,[1] Jean A. Shoveller,[4] Julio S.G. Montaner,[1]; for the Seek and Treat for Optimal Prevention of HIV/AIDS Study Group

1. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, Canada; 2. Department of Psychiatry, University of California, San Diego, California, United States; 3. Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, Canada; 4. School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada

Background

- In the last decade, metal health disorder (MHD) was the leading cause of disability in Canada and in the United States, with 1 in 5 people experiencing some form of MHD.
  - MHD poses an enormous economic burden to individuals and healthcare systems.
- People living with HIV (PLWH) have an increased risk of developing MHD than the general population, particularly mood (major depression) and anxiety.
  - Additionally, PLWH suffering from schizophrenia are more likely to have a substance use disorder compared to the general population.
- Therefore, in this study, we focused on assessing the healthcare impact of MHD among PLWH in British Columbia (BC), from 2000 until 2014.

Methods

- Participants were recruited from the BC Seek and Treat for Optimal Prevention of HIV/AIDS (STOP HIV/AIDS) retrospective population-based cohort:
  - Which is derived from linkages among provincial and administrative databases, and contains longitudinal individual-level data on all PLWH ever diagnosed in the province.
- Eligible participants were ≥18 years old, naïve to ART, and started ART between 01/01/2000 and 31/12/2013, and were followed until the earliest of death date, 31/12/2014 or the last contact date.
- The main outcome was bi-annual direct costs calculated in 2015$CDN associated with the number of physician visits and acute care hospitalizations.
- The main exposure was the presence of a MHD (at any point during follow-up). We identified four types of MHD: i) anxiety disorders, ii) mood disorders, iii) personality disorders, and iv) schizophrenia related disorder, using a published case-finding algorithm based on ICD 9 and 10 codes.
- We built a confounder two-part model, using generalized logistic and gamma regression models, adjusting for sex, age, cohort effect, HIV risk group, treatment-related factors, and the number of comorbid diseases other than MHD.

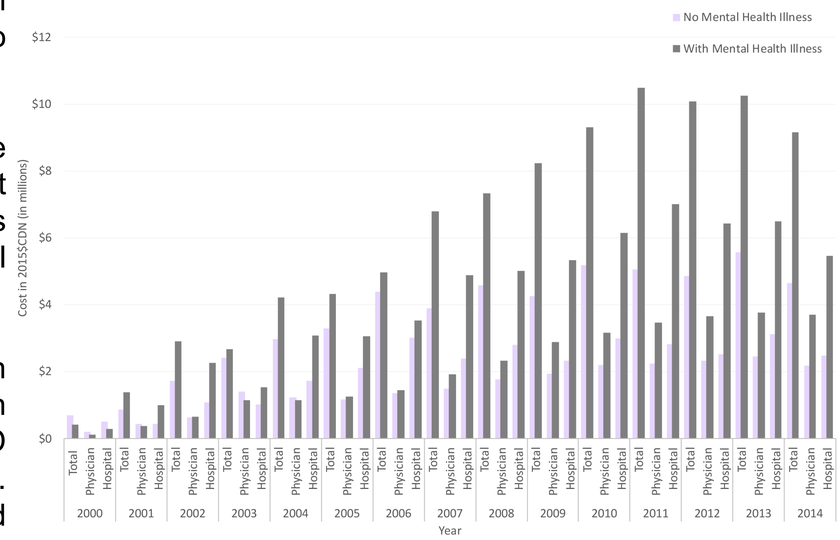
Results

- Of the 4774 individuals, followed for a median of 5.48 years (25th-75th percentile: 2.98 – 8.79), 50% had at least one MHD by the end of follow-up.

Results (cont.)

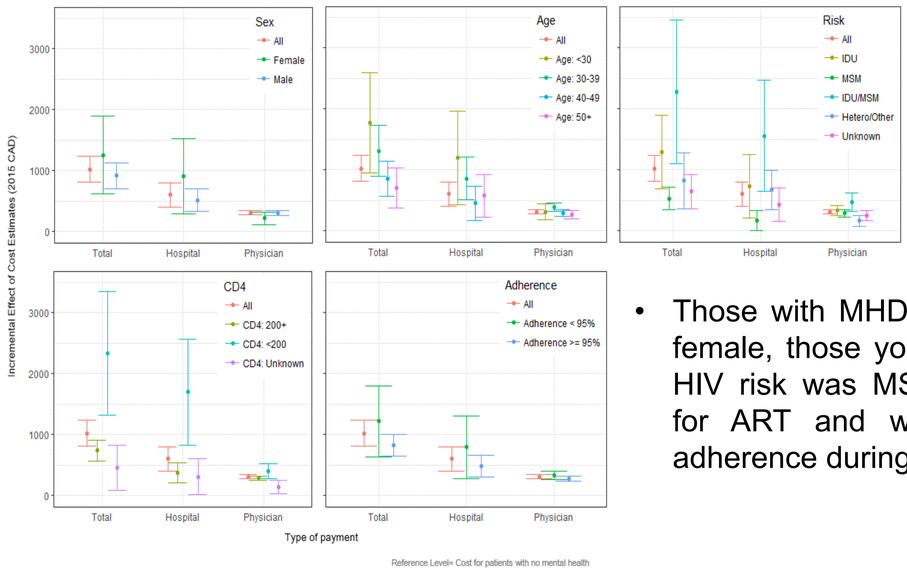
- In the 14-years of follow-up, there were 797,368 encounters with the healthcare system (58% due to MHD), incurring an overall cost of $146,905,094 (63% due to MHD) (Fig 1).
- Although only 1% of encounters were due to acute care hospitalizations, the cost associated with these hospitalizations were responsible for 63% of the overall cost.
- Participants with MHD incurred, on average, higher bi-annual costs between 2000 and 2014 than those without MHD ($1,019; 95% CI ($808 - $1,231); Fig. 2). High heterogeneity in cost was observed among confounders (Fig 2).

Fig 1. Cost per year by mental heath disorder status



- The overall age-sex standardized physician visit rate (per 100 person-years) in the non-MHD and the MHD groups was 2,290 (95% CI 2,277-2,302) and 3,873 (95% CI 3,858-3,888), respectively. The overall age-sex standardized acute hospitalization rate (per 100 person-years) in the non-MHD and the MHD groups was 22 (95% CI 21-24) and 53 (95% CI 51-55), respectively.

Fig 2. Incremental effect of mental health disorders on 6-month interval costs, stratified by different confounders (Bars indicate the 95% Confidence Interval)



- Those with MHD incurring higher costs were female, those younger than 30 years, whose HIV risk was MSM/IDU, who presented late for ART and who maintained sub-optimal adherence during follow-up.

Discussion

- Substantial healthcare-related direct costs were associated with having MHD.
- Those sub-groups with MHD incurring higher costs demonstrate a need to roll out mental health integrated care services.
- The next step will be to understand what MHD is driving the difference among groups.

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