Preliminary Findings on the Association Between Symptoms of Depression and Adherence to Antiretroviral Therapy in Individuals Born Inside Versus Outside of Canada

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For optimal health, people living with HIV (PLWH) need to adhere to antiretroviral therapy (ART). We explored the relationship between symptoms of depression and ART adherence for PLWH born inside versus outside of Canada. PLWH taking ART (N = 57) completed self-assessments of depression and adherence to ART. Adherence rates did not differ significantly for PLWH who were born outside (66.7% were ≥95% adherent) versus inside Canada (51.6% were ≥95% adherent), but the relationship between symptoms of depression and ART adherence depended on the country of birth: for individuals born in Canada, depression was associated with lower ART adherence (β = −.21, p = .005, 95% confidence interval −.35 to −.07); for PLWH born outside of Canada there was no association between symptoms of depression and ART adherence. Symptoms of depression may not universally affect ART adherence; country of birth may be one critical variable impacting this relationship.

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Clinical improvements in the management of HIV, including wider availability of treatment and more effective antiretroviral therapy (ART), have changed the high mortality and morbidity rates in people living with HIV (PLWH; Schwarcz, Vu, Hsu, & Hessol, 2014). The trajectory of HIV disease progression is also changing, with HIV-related causes of death declining from 92.4% (between 1996 and 1997) to 72.3% (between 2006 and 2011). Epidemiological evidence indicates that deaths from suicide and mental disorders due to substance abuse have substantially increased in younger adults infected with HIV (<49 years of age). Deaths from overdose and suicide now account for higher proportions of

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morbidity rates, as compared to any other non-HIV-related deaths (Schwarcz et al., 2014). It becomes critical, therefore, for research efforts to address the implications that psychological factors have on health outcomes for PLWH.

In 2013, approximately 35 million individuals worldwide were living with HIV, with approximately 15 million taking ART (World Health Organization, 2014). In Canada, approximately 71,300 people were living with HIV infection (11.4% increase from 2008), and individuals arriving from developing countries where HIV is endemic accounted for 15%-17% of the prevalence of HIV (Public Health Agency of Canada, 2011). In fact, the rates of HIV diagnosis have been nine times higher in individuals who immigrated to Canada, in contrast to other Canadians (Canadian Working Group on HIV and Rehabilitation, 2015).

Individuals who immigrate to North America face unique stressors, such as language barriers and disrupted social support systems that, taken cumulatively, may differentially impact mental and physical health outcomes of PLWH (Lawson et al., 2006; Wong, Kanagaratnam, Yee, & Fung, 2004). Yet, limited research has focused exclusively on distinguishing HIV-related outcomes for PLWH who were born inside versus outside of North America. Research groups in the Netherlands have indicated that, compared to Dutch-born PLWH, those who immigrated had more symptoms of depression, worse immunological response (i.e., detectable plasma viral load), lower adherence to ART (<100% adherence measured using self-report and pharmacy refill), increased perceived HIV stigma, lower quality of life (Sumari-de Boer, Sprangers, Prins, & Nieuwkerk, 2012), and virological failure (i.e., while on ART, plasma viral load ≥ 400 copies/mL; Nellen et al., 2009). Immigration status (born in Netherlands vs. immigrant to Netherlands), however, did not directly influence adherence to ART or medical health outcomes (Sumari-de Boer et al., 2012). Instead, perceived HIV stigma and symptoms of depression mediated the relationship between immigration status and poor adherence to ART and poorer immunological responses (viral load ≥ 400 copies/mL while on ART), respectively. In contrast, Nellen and colleagues (2009) failed to find a difference in adherence to ART between PLWH who were native to the Netherlands and those who immigrated. The inconsistent finding may, in part, be explained by differences in operationalization and measurement of adherence to ART. Sumari-de Boer and colleagues (2012) defined non-adherence as failing to take ART 100% of the time in the previous month, while Nellen and colleagues (2009) used pharmacy refill records for the previous 6 months. Continuous efforts are thus needed to elucidate the noted differences in symptoms of depression, medical health outcomes, perceived HIV stigma, and adherence to ART between immigrant and nonimmigrant PLWH.

Limited studies to date have exclusively contrasted PLWH who were born inside versus outside of Canada on important medical and mental health parameters (for exceptions see Raboud, Blitz, Antoniou, Loutfy, & Walmsley, 2012; Wagner et al., 2010). The few studies that have been conducted to date generally support findings from outside of North America (e.g., Wagner et al., 2010). Largely, PLWH who immigrate to Canada report increased experiences of HIV stigma and overt discrimination (Ndirangu & Evans, 2009), lack of cultural understanding (Burns, Imrie, Nazroo, Johnson, & Fenton, 2007), and increased psychological distress (Cohen, Arad, Lorber, & Pollack, 2007) and depressive symptoms (Noh et al., 2012). Wagner and colleagues (2010) contrasted the experiences of perceived HIV stigma between HIV-infected women who were born outside, versus inside, Canada. Perceived HIV stigma was higher for women born outside of Canada. Importantly, different psychological predictors of perceived HIV stigma were identified between the two groups: in Canadian-born HIV-infected women, increased anxiety and lower education level predicted higher perceptions of HIV stigma, whereas for HIV-infected women born outside Canada, the only predictor of stigma was having been judged negatively by a physician in Canada (Wagner et al., 2010). Despite the negative psychosocial outcomes for PLWH who immigrated to Canada, Raboud and colleagues (2012) reported that PLWH who had been in Canada for 10 or fewer years had better clinical outcomes (i.e., lower risk of death, reaching virologic suppression more quickly), as compared to PLWH who were born in Canada or who had lived in Canada for more than 10 years.