TITLE: Association between stress and antiretroviral therapy adherence among women living with HIV in Toronto, Ontario: Assessment of correlates, mediation and moderation

Women living with HIV experience life stressors and levels of depression higher than in men living with HIV that may interfere with antiretroviral therapy (ART) adherence. This study sought to: “Determine the association between stress, depression and ART adherence among women living with and accessing care for HIV in Toronto, Ontario, between 2007 and 2012.” A cross-sectional study was conducted using data from clinical charts of women participating in the Ontario HIV Treatment Network (OHTN) Cohort Study (OCS), as well as a standardized questionnaire completed at the last interview. Three main variables were of interest: stress (measured using the National Population Health Survey [NPHS] Stress Questionnaire), depression (using the Center for Epidemiological Studies Depression [CES-D] Scale), and poor (<95%) and adequate (≥95%) ART adherence (using the AIDS Clinical Trial Group [ACTG] Questionnaire). Logistic regression was used to identify covariates of adequate ART adherence. The association between stress and adequate ART adherence was explored by evaluating depression as a mediator, and employment status, ethnicity, age at interview and living alone as moderators. Included in the analysis were 307 women. The median age was 43 years and 60.7% (n=181) self-identified as African, Caribbean or Black. The majority of the women (88.5%, n=192) had CD4 ≥ 200 cells/mm³, an undetectable viral load (85.7%, n=186) at the time of the last interview and 34.5% (n=106) and 65.5% (n=201) had poor and adequate adherence, respectively. Compared to women with adequate adherence, those with poor adherence had more reports of hazardous alcohol use (p=0.008), stress events (p=0.001) and depressive symptoms (p=0.008). No hazardous alcohol use (OR=2.20, 95% CI: 1.12-4.32) and fewer stress events (OR=0.56, 95% CI: 0.33-0.94) were associated with increased odds of adequate adherence. Depression did not mediate the association between stress and ART adherence. Employment status, ethnicity, age at interview and
living alone did not moderate the association between stress and ART adherence. However, the association between environmental stress and ART adherence was attenuated among women aged ≤35 years (OR=0.73, 95% CI: 0.56-0.94) compared to women ≥45 years (OR=0.51, 95% CI: 0.34-0.77). This study suggests that interventions for women accessing HIV care to improve ART adherence and ensure levels ≥95% must also aim to manage, adapt to or modify stress. Interventions should also focus on enhancing and promoting adaptive coping strategies that may reduce or eliminate hazardous alcohol use, resulting in improved HIV disease management and ART adherence.