BACKGROUND

- Some evidence that HIV exacerbates sleep problems
- More than half of adults living with HIV suffer from sleep problems
- Prevalence of sleep problems even higher in older adults living with HIV (70%)
- Sleep problems negatively impact health and quality of life
- Sleep problems contribute to high level of mild cognitive impairment
- Cognitive impairment is a primary reason for medication non-adherence in older adults
- Medication adherence is necessary to live successfully with HIV

Older adults currently represent about 50% of those living with HIV, and it is projected that by 2020 that percentage will increase to 70%.

PURPOSE AND HYPOTHESIS

The purpose of this study was to examine the association between sleep and cognitive function in a sample of older adults living with HIV. Previous research has suggested that improving cognitive function would aid in improving medication adherence in older adults living with HIV. We hypothesized that improving sleep duration could improve cognitive function, thereby improving medication adherence.

RESULTS

- The average hours slept per night measured by the actigraph was less than 5 hours
  - (M = 4 hours 56 minutes ± 1 hour 52 minutes)
- The average hours slept per night measured by the PSQI was just over 6 hours
  - (M = 6 hours 7 minutes ± 23 minutes)
- The mean score on the MoCA indicated mild cognitive impairment (Score ≤ 26)
  - (M = 24.62 ± 5.37)
- The mean score on the Cognition Battery from the Toolbox was slightly below age-adjusted standard score on a national sample (100)
  - (M = 92.1 ± 17.5)

Multiple regression analysis was used to test if sleep problems significantly predicted cognitive function as determined by the MoCA or the NIH Cognitive Battery Fluid Cognition Score.

Fluid Cognition Regression: The results indicated that two predictors, Global sleep score from the PSQI and sleep efficiency explained 23% of the variance (R² = .238, F(2,38) = 5.94, p = .005). Sleep efficiency (time in bed / time asleep) significantly predicted cognitive function (β = .41, p = .005), as did the Global Sleep Score (β = 2.0, p = .002).

MoCA Regression: Sleep measures were not predictive of cognitive function when using the MoCA to measure cognition (p = .39), and no individual predictors were significant.

CONCLUSIONS

This study found poor sleep even more prevalent in older adults living with HIV than was expected. It also found significant discrepancies between objective (actigraph) and subjective (PSQI) measures when measuring sleep duration and sleep efficiency, with objective measures reporting less hours slept, and more sleep interruptions through the night than did subjective measures. Because declines in cognitive function negatively impact a person's ability to manage their medications, routine assessment and treatment of sleep problems has the potential to improve medication adherence. An essential component of successfully aging with HIV.

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MATERIALS AND METHODS

- Forty-six older adults (30 years of age and older) living with HIV were enrolled in this study.
- Three participants did not complete the study.
- Participants completed cognitive testing at study entry and after wearing an actigraph watch for one week.
- Actigraph measured time in bed, sleep, and daytime activity.
- Sleep diary, fatigue survey and daytime sleepiness survey were also completed each day the actigraph watch was worn.
- After one week participants returned to the clinic and completed the Pittsburgh Sleep Quality Index (PSQI), and depression and fatigue surveys.
- Cognitive testing using the NIH Toolbox Cognition Battery and the Montreal Cognitive Assessment (MoCA).
- Participants were recruited from the Infectious Disease Clinic.
- All participants were prescribed antiretroviral therapy (ART).