Purpose
This preliminary study is designed to test relationships of stress, HRV, fatigue, and medication adherence.

Background
- Adherence to HIV antiretroviral medications is a critical determinant of treatment success or failure.
- ART nonadherence is suboptimal and range between 27%-80% (depending on population and measure).
- Assessment methods: Subjective (patient self-reporting) or objective (pill count, drug concentration and metabolites, pharmacy refill data or (MEMS) caps.
- Several factors may impede adherence: psychosocial, demographic, disease, patient-provider relationship.
- Stress and fatigue are less studied and have inconsistency in published literature.
- Fatigue is commonly-reported symptoms by individuals with HIV infection (33-88%).
- Individuals with fatigue were significantly less likely to adhere to ART (few studies).
- HRV reflects the ability of the heart to adapt to various internal and external physiological and environmental stimuli within a specific timeframe (stress, fatigue).

Methods

Setting: Infectious Disease Clinic in Denver CO

Participants: N = 55 PLWH with daily surveys (medication adherence, fatigue and stress) and sensor (FitBit Alta™ wristband)

Procedure:
- Participants were sent daily surveys at random times for 30 days
- Participants used a Fitbit monitor for the same 30 days

Data analysis:
- Descriptive data, Generalized Linear Mixed Models, & chi-square test scores

Important results:
- High stress on 23% of days, at least once for 56% of persons with HIV
- Sensors showed stress: HRV < 75 on 15% of days / 53% of participants
- Heart rate variability M=117 mms/beat
- Factors predicting fatigue: HRV significant p<0.001 Stress significant p<0.001 but not self-reported adherence

Daily Variables -> Next day Adherence

Conclusions
- Despite scientific and clinical efforts, adherence to ART remains suboptimal
- Adherence should be assessed regularly and should be individualized
- Future studies can focus on qualitative aspects of nonadherence
- Larger sample and multi-location studies are needed

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