

Introduction

- People living with HIV (PLWH) have increasingly longer life spans and by 2015 50% of all PLWH will be over 50 years.
- This age group may face different challenges to self-management, including increased stress and social isolation, which directly impact their ability to conduct important daily self-management behaviors, including physical activity
- Little is known about the relationship between stress and isolation in older adults living with HIV, compared to younger adults living with HIV
- To fill this gap, in this study, our aims were to:
 - [1] Describe and compare levels of stress and social isolation between older PLWH (≥ 51 years of age) and younger HIV-infected adults (18-50 years); and
 - [2] Describe and compare differences in levels of stress, social isolation, and physical activity between men and women living with HIV

Materials and Methods

- We used a cross sectional cohort study
- The study had a purposive sample of 102 PLWH who were:
 - Adults (>18 years)
 - Prescribed anti-retroviral medication
 - Not diagnosed with diabetes or have a cardiac pacemaker
- Participants complete one study visit to obtain descriptive data on levels of stress, isolation, and physical activity using:
 - Holter cardiac monitoring assessing heart rate variability
 - Perceived Stress Scale (range:0-40)
 - One item Stress Visual Analog Scale (range: 0-10)
 - Hawthorne Friendship Scale (range:0-24)
 - Exercise Diary documenting 7 day exercise bouts, intensity, and duration
 - HIV Stigma Scale (range: 13-52)

Figure 1 : Participant Screening & Enrollment

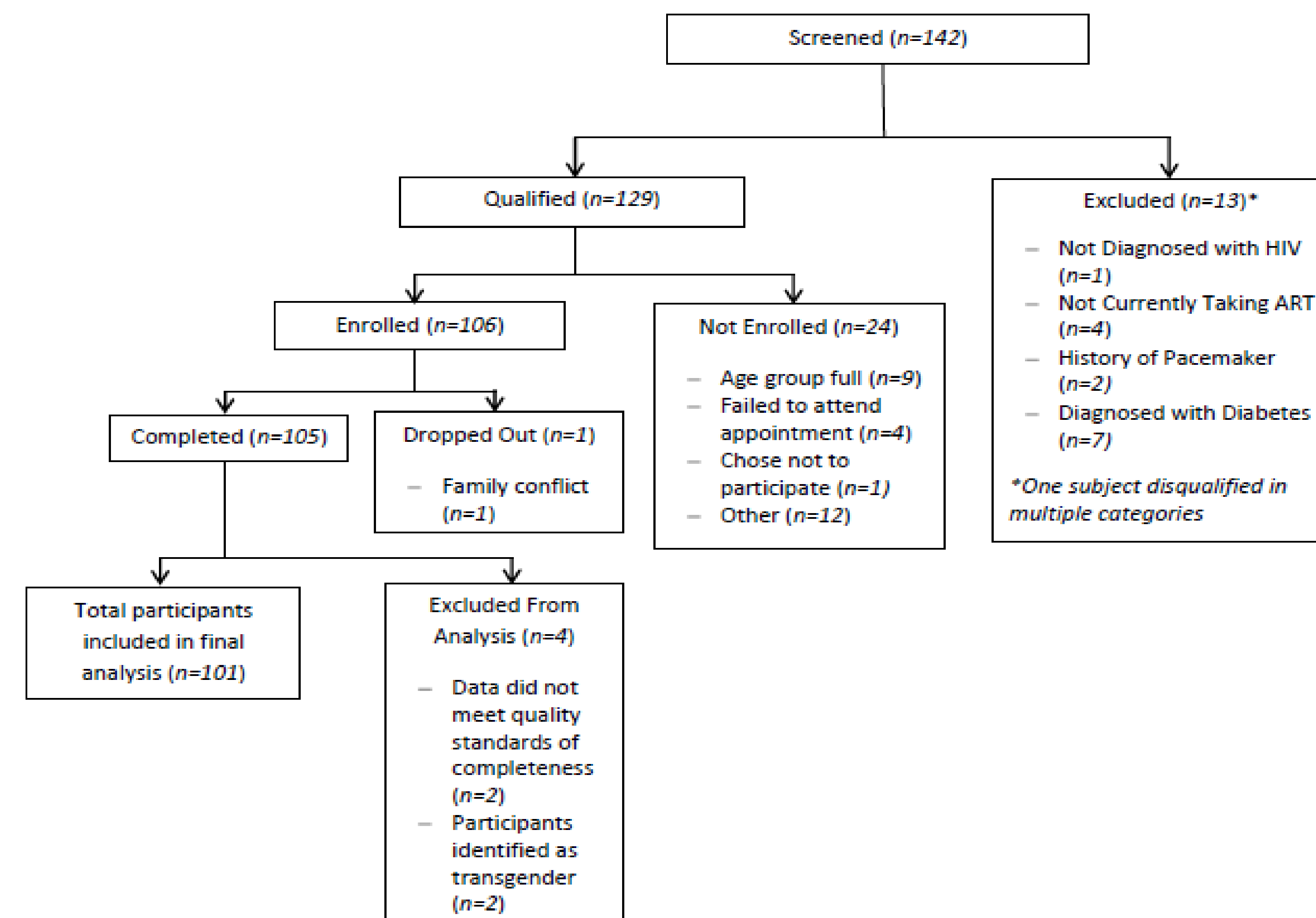


Table 1: Demographic Characteristics of Study Participants

	Male (n=54)		Female (n=48)	
	Mean or Frequency	Standard Deviation or %	Mean or Frequency	Standard Deviation or %
Age	47.44	8.61	48.46	8.98
Race				
African American/Black	42	80.77	43	87.76
Hispanic/Latina	0	0.00	2	4.08
Native American/Indian	1	1.92	0	0.00
White/Anglo (non-Hispanic)	7	13.46	3	6.12
Marital Status				
Married	2	3.85	7	14.29
Single	41	78.85	29	59.18
Separated	1	1.92	1	2.04
Divorced	3	5.77	10	20.41
Domestic Partnership	5	9.62	0	0.00
Education Level				
11th grade or less	8	15.38	16	32.65
High school or GED	16	30.77	12	24.49
Some college or AA/technical school	17	32.69	16	32.65
College degree (BS, BA, MS, or MA)	12	23.08	4	8.16
Income				
No monthly income	9	17.31	8	16.33
Less than \$200	6	11.54	1	2.04
\$200-\$599	3	5.77	6	12.24
\$600-\$799	17	32.69	23	46.94
\$800-\$999	9	17.31	2	4.08
\$1,000 or more	9	17.31	8	16.33
Have Health Insurance	47	90.38	48	97.96
Have Children	15	28.85	41	83.67
Paid employment	6	11.11	8	16.33
Have permanent Housing	46	85.19	44	89.80

Results

Table 2: Baseline Outcomes by Gender

Outcome	Men (n=54)		Women (n=48)		Total (n=102)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Physiological Stress: Heart Rate Variability	66.4	28.36	65.7	34.70	66.1	31.40
Perceived Stress Scale	17.7	6.40	17.5	7.30	17.3	6.91
Stress Visual Analog Scale	3.01	2.62	3.96	2.81	3.42	2.74
Isolation	16.6	5.04	17.25	4.52	17.02	4.80
Physical Activity (hrs/week)	5.11	5.68	4.12	5.16	4.61	5.43

Table 3: Multivariable Models Predicting Stress

	Model 1: Heart Rate Variability		Model 2: Perceived Stress Scale		Model 3: Stress Visual Analog Scale	
	Estimate (CI)	P Value	Estimate (CI)	P Value	Estimate (CI)	P Value
Age (years)	-1.3 (-2.0, -0.6)	0.001	-0.10 (-0.25, 0.05)	0.207	-0.05 (-0.12, 0.02)	0.146
Gender: Female	4.6 (-9.9, 19.1)	0.529	1.00 (-1.95, 3.94)	0.503	1.44 (0.07, 2.81)	0.039
BMI	-0.9 (-1.8, -0.1)	0.032	0.02 (-0.16, 0.19)	0.857	0.01 (-0.07, 0.09)	0.803
Income > \$800/month	8.2 (-7.0, 23.5)	0.287	0.38 (-2.71, 3.48)	0.805	0.38 (-1.07, 1.82)	0.605
Education \geq High School	-15.1 (-30.7, 0.4)	0.056	-2.15 (-5.33, 1.04)	0.184	0.19 (-1.30, 1.67)	0.802
Years since HIV Diagnosis	00.2 (-1.3, 1.1)	0.685	0.04 (-0.18, 0.26)	0.751	-0.02 (-0.13, 0.10)	0.776
Isolation	0.50 (-1.3, 2.2)	0.582	-0.40 (-0.76, -0.04)	0.029	-0.07 (-0.24, 0.09)	0.380
Stigma	0.3 (-0.7, 1.3)	0.561	0.16 (-0.04, 0.36)	0.119	0.03 (-0.07, 0.12)	0.590
Exercise (hrs/week)	-0.1 (-1.3, 1.1)	0.859	0.08 (-0.17, 0.33)	0.537	.05 (-0.05, 0.15)	0.354

Conclusions

- As expected, age was a strong predictor of physiological stress, but, surprisingly, not of psychosocial stress
- Gender does not appear to exert significant influence on either physiological or perceived stress, however women did report significantly higher stress levels on the visual analog scale
- Among all the hypothesized predictors, isolation exerted the most influenced on psychosocial stress

Future Directions

- Examine the predictors of isolation and its relationship to stress and additional self-management behaviors
- Examine more upstream biological markers of stress to describe the relationship between physiological and psychosocial stress in PLWH