Gender differences in healthy aging scores among Canadian HIV-positive older adults in the CHANGE HIV cohort

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Background:

- Life expectancy among people living with HIV (PLWH) is approaching that of the general population with a growing proportion of individuals who are now over the age 65.
- PLWH continue to experience greater burden and earlier onset of medical comorbidities, especially among those who initiated treatment at lower CD4 counts.
- Important differences in clinical outcomes and quality of life persist, including gender-based disparities among PLWH.
- Examining healthy aging as a multidimensional state can guide development of preventative and management strategies that are appropriate for the complex social and healthcare needs of people aging with HIV.

Methods:

- The CHANGE HIV (Correlates of Healthy Aging iN GEriatric HIV) study is a Canadian cohort of PLWH age 65 and older.
- In this cohort, healthy aging is assessed using the Rotterdam Healthy Aging Score (HAS).
- Scores are calculated across 7 domains of health (Figure 1).
- We report on the overall and 7 domains of the HAS for the first 227 participants in the cohort and determine the proportion of those with:
  - ▷ Healthy aging scores (HAS 13-14)
  - ▷ Intermediate aging scores (HAS 11-12)
  - ▷ Poor aging scores (HAS 0-10)
- Scores were compared according to gender and other sociodemographic and HIV-related factors using Kruskal-Wallis and Fisher's exact tests for comparisons.

Figure 1. Rotterdam Healthy Aging Score (HAS)

Domains of Health	Measurement Tool	Score	
Quality of Life	Life Satisfaction Questionnaire	0 Low	Low QoL on 5-8 items
		1 Moderate	Low QoL on 1-4 items
		2 High	High QoL on all 8 items
Social Support	Questionnaire	0 Low	"Agree" with 0-2 statements
		1 Moderate	"Agree" with 3-4 statements
		2 High	"Agree" with all 5 statements
Pain	Self-rate	0 Low	Very severe pain for >1 activity
		1 Moderate	Everything in between
		2 High	No or mild pain for all activities
Physical Function	Basic Activities of Daily Living (bADL)	0 Low	Severe disability on bADL or iADL
	Instrumental Activities of Daily Living (iADL)	1 Moderate	Everything in between
		2 High	Mild disability on bADL and iADL
Cognitive function	Mini Mental State Examination (MMSE)	0 Low	Score of 0 to 20
		1 Moderate	Score of 21 to 25
		2 High	Score of 26 to 30
Mental Health	Center for Epidemiologic Studies Depression Scale (CES-D)	0 Low	Score of 23 to 60
		1 Moderate	Score of 17 to 22
		2 High	Score of 0 to 16
Chronic Disease	Number of Chronic Diseases	0 Low	>1 disease "multimorbidity"
		1 Moderate	1 disease
		2 High	0 diseases

Results:

- Median [IQR] age was 70 [68,74], 203 (89%) of participants were men, 21 (9%) were women and 3 (1%) were transgender.
- Majority of participants were white (77%), born in Canada (66%) and retired (77%).
- A total of 137 individuals were enrolled in the cohort prior to the COVID-19 pandemic.
- Median [IQR] HAS was 12 [10,13] with 77 participants achieving healthy, 89 intermediate and 61 poor aging scores (Figure 2).
- Women and transgender participants had lower median [IQR] HAS (10.5 [9,13] compared to 12 [11,13] among men) and higher proportion of poor aging scores (50% compared to 24% among men, p=0.015) (Figure 3).
- Women had fewer comorbidities compared to men (p=0.024), but worse cognitive function scores (p=0.002) and more pain (p<0.001).
- HAS scores were lower among retired individuals compared to those employed or engaged in volunteer activities (p=0.013) but did not differ by age (p=0.641), race (p=0.698), country of birth (p=0.887), CD4 count nadir (p=0.510), or duration of HIV infection (p=0.066).
- HAS scores did not differ among those enrolled in the cohort prior to and since the start of the COVID-19 pandemic (p=0.934).
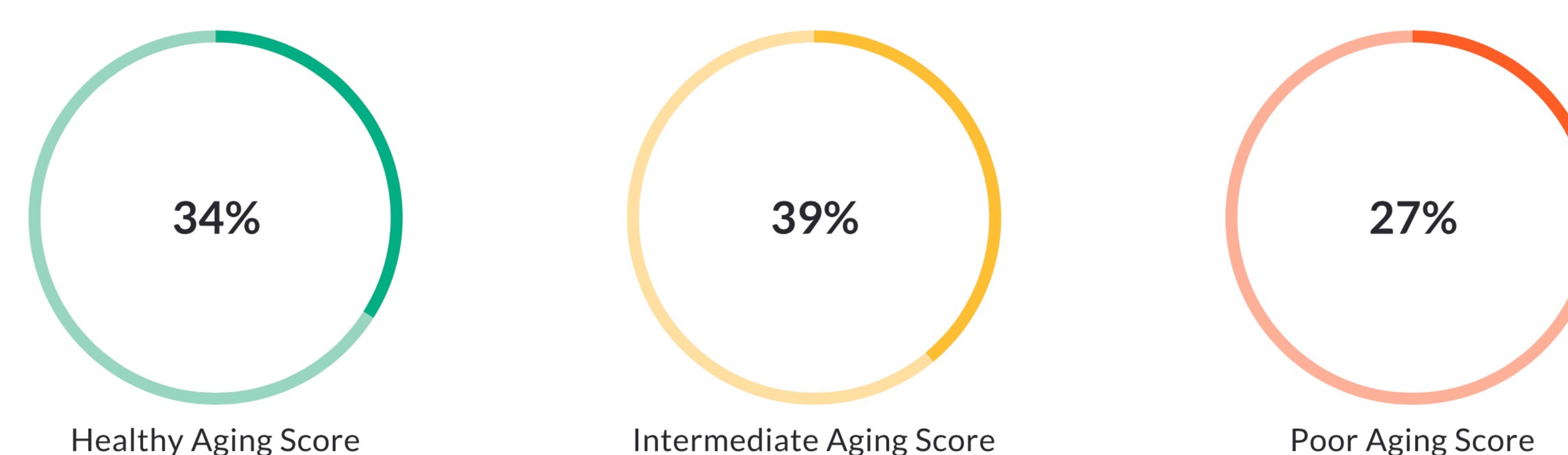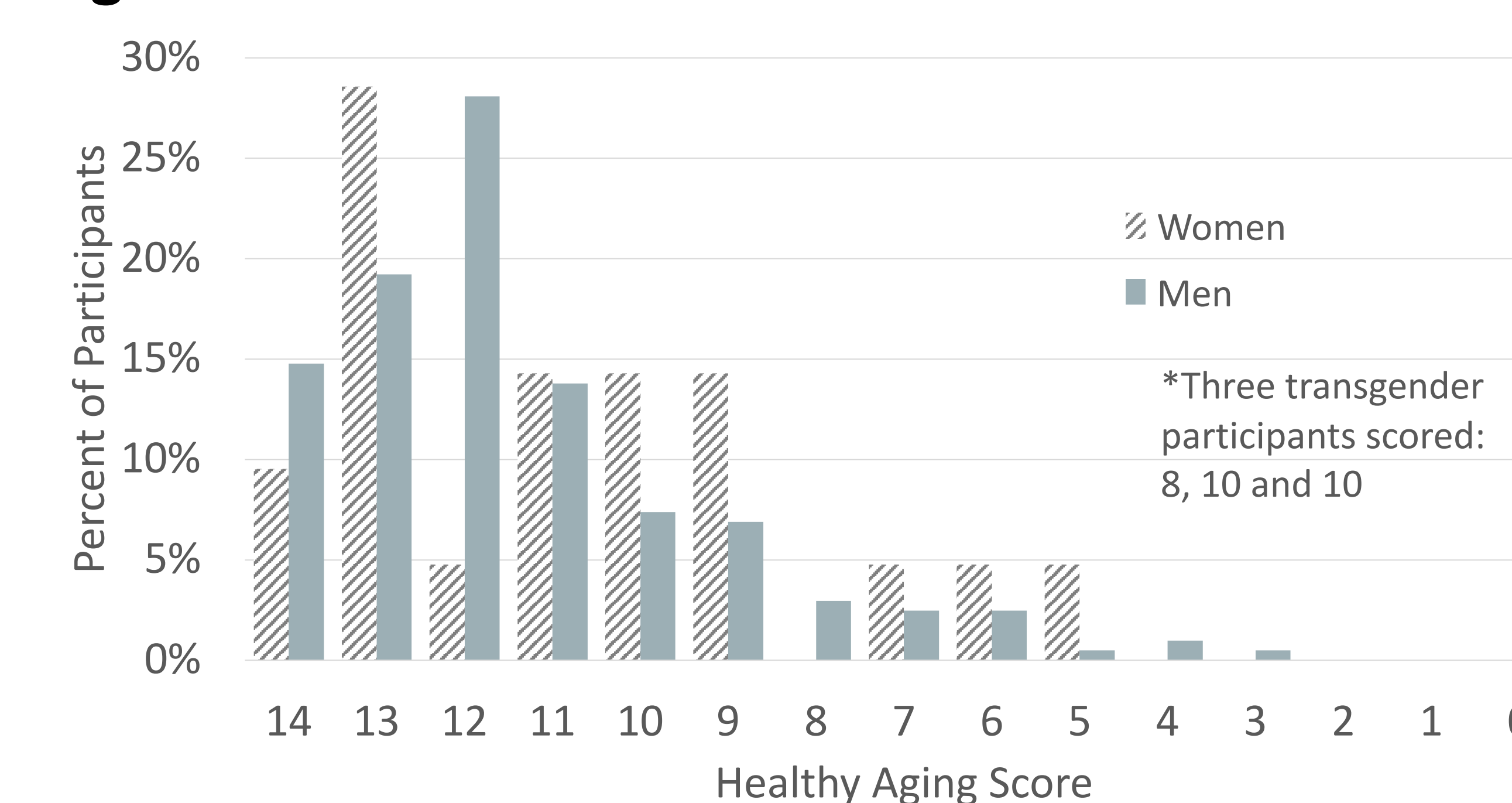
Figure 2. HAS distribution in the CHANGE HIV cohort

34% Healthy Aging Score   39% Intermediate Aging Score   27% Poor Aging Score

Figure 3. Gender differences in HAS distribution

Percent of Participants vs Healthy Aging Score (14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0). Women / Men. *Three transgender participants scored: 8, 10 and 10

Conclusions:

- Gender seems to have an important impact on the aging experience of PLWH, especially across comorbidity, cognitive function and pain domains of health.
- Using a multidimensional score like the HAS can identify individuals at risk of poor clinical outcomes and direct interventions that support their healthy aging.

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