Correspondence

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Prevalence and 1-year incidence of frailty among women with and without HIV in the Women's Interagency HIV Study

A previous cross-sectional analysis of 2028 women in the Women's Interagency HIV Study (WIHS), who were on average 39 years old, found a frailty prevalence of 17% and 10% in women with or at risk for HIV, respectively [1]. To our knowledge, the only two longitudinal studies of frailty among people with HIV were conducted in the Multicenter AIDS Cohort Study (MACS), which includes only men [2,3]. Data on the distribution of frailty components are limited, and have not been reported for HIV-seropositive people in the United States [4–7].

The current analysis included data from eight WIHS sites located in Brooklyn, New York; San Francisco, California; Chicago, Illinois; Washington, DC; Atlanta, Georgia; Chapel Hill, North Carolina; Miami, Florida; and Birmingham, Alabama/Jackson, Mississippi [8–10]. Institutional review board approval was obtained at each site and written informed consent was obtained from all women. The study sample included 1404 women aged at least 40 years old who had at least one frailty assessment between 1 October 2015 and 30 September 2017. Of the 1404 women, 424 had frailty assessments taken at both baseline and approximately a 1-year period of follow-up; 46 women were excluded because of frail status at baseline and 378 women were included in analyses estimating the 1-year risk of frailty.

Since 1 October 2015, the WIHS protocol has included the measurement of frailty components and determined frailty status among women aged at least 40 years old. The Fried Frailty Index, a tool validated in the Cardiovascular Health Study, was used to operationalize the frailty phenotype based on five components: weakness, slowness, unintentional weight loss, low activity, and exhaustion [4]. Frail, prefrail, and robust statuses were defined as exceeding the component-specific threshold for at least three frailty components, two frailty components, and one or less frailty component, respectively [4]. We used the cut-off points for walking speed and grip strength validated by Fried, unlike previous analyses, which used the highest and lowest quintiles of the distributions from their HIV-seronegative populations [1–4].

The median age was 52 years [interquartile range (IQR): 47–57] for both women with HIV ($n = 1025$) and without HIV ($n = 379$). Most women were black non-Hispanic [75% ($n = 1055$)], had at least a high school education [70% ($n = 977$)], and had an annual household income $18 000 or less [63% ($n = 876$)]. The prevalence of current smoking [47% ($n = 177$); 38% ($n = 392$)], weekly alcohol consumption greater than seven drinks [19% ($n = 73$); 6% ($n = 65$)], and other substance use [34% ($n = 128$); 25% ($n = 252$)] was higher among women without HIV than among women with HIV. Among women with HIV, 71% ($n = 732$) had an undetectable viral load.

The overall prevalence of frailty was 11.5% ($n = 161/1404$); 10.0% ($n = 103/1025$) among women with HIV and 15.3% among women without HIV ($n = 58/379$). Frailty prevalence was higher for women without HIV compared with women with HIV for all age groups except 55–59 years (Fig. 1a). Low physical activity was the most frequently occurring frailty component (Fig. 1b). The prevalence of frailty components was similar for women with and without HIV, except that it was more common for women with HIV to report unintentional weight loss and for women without HIV to meet the definition for weakness for each frailty category (Fig. 1b). The most common combinations of frailty components were similar in women with and without HIV and included low physical activity and exhaustion for prefrail women [67% ($n = 252$)], and these components in combination with one other component for frail women [68% ($n = 110$)]. The prevalence of current smoking [41% ($n = 41$); 41% ($n = 113$)], weekly alcohol consumption greater than seven drinks [18% ($n = 18$); 9% ($n = 26$)], and other substance use [31% ($n = 31$); 22% ($n = 60$)] was more balanced between women without HIV ($n = 101$) and women with HIV ($n = 277$) in the risk sample compared with the prevalence sample. The overall 1-year risk of frailty was 6.6% (95% confidence interval 4.1–9.1) and similar for women with [6.5% ($n = 18$)] and without HIV [6.9% ($n = 7$)].

Previous general population studies suggest that frailty is associated with older age, female sex, minority race/ethnicity, lower socioeconomic status, geographic location, comorbidities, poor nutrition, smoking, and possibly alcohol consumption [1,4,11–14]. To ensure comparability to HIV-seropositive women, the WIHS preferentially recruited HIV-seronegative women with characteristics that are associated with an increased risk of HIV infection, such as injection drug use [9]. Several of these risk characteristics are highly prevalent in the WIHS population [10]; some were more prevalent among

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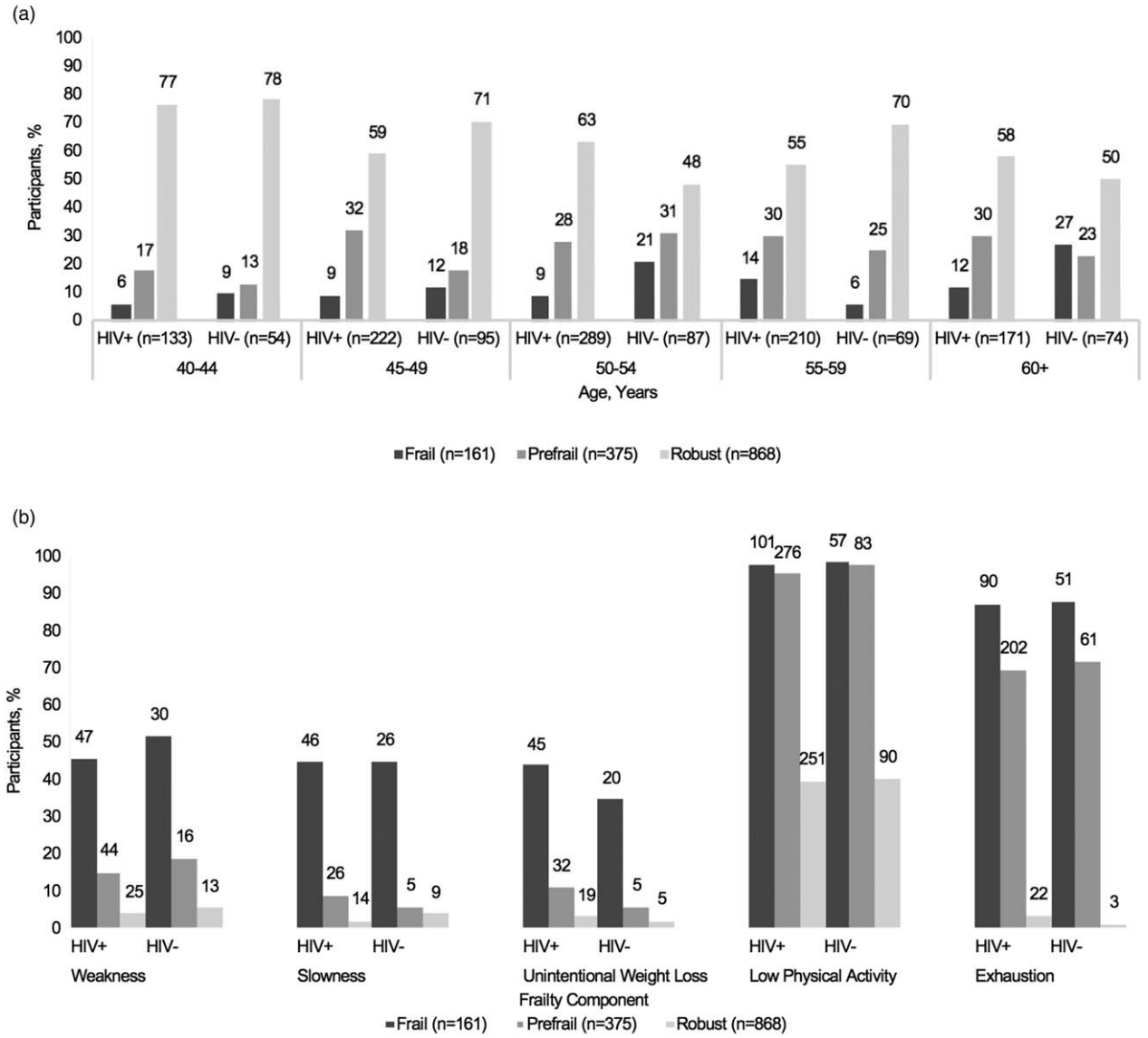

Fig. 1. Prevalence of frailty (a) and distribution of frailty components (b) in the Women's Interagency HIV Study by Frailty Status and HIV Status 2015–2017 ($n = 1404$). The height of each bar represents the percentage of participants reporting each frailty component and the value above each bar represents the number of participants.

women without HIV in our sample. Our findings suggest that social and behavioral risk factors could play a pivotal role in frailty occurrence among HIV-seropositive women with or those who are seronegative but at risk for HIV infection. Future studies should investigate modifiable risk factors to reduce the burden of frailty among women with and without HIV, who are vulnerable to frailty at ages even younger than 65 years.

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Conflicts of interest

There are no conflicts of interest.

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