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The Prevalence of Frailty and the Association of Covariates in the 90+ Study

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Background: Frailty is a syndrome used as an indicator to assess the vulnerability of older adults to various stressors. Few studies focusing primarily on individuals 90-years old and above have been done to understand frailty. The aim of this study is to evaluate the prevalence and the associated factors of frailty in The 90+ Study, a longitudinal study of community-dwelling residents 90-years and above.

Methods: This study includes 824 participants of The 90+ Study who were assessed in person at baseline for five components of frailty: weight, weakness, exhaustion, slowness and low physical activity. Frailty status was determined by satisfying the criteria for at least three of the five components. Logistic regression models were constructed to assess the relationship between the prevalence of frailty and education, marital status, living situation, sex, and age.

Results: This study estimated the overall prevalence of frailty in the oldest old as 29.6% (95% confidence interval [CI], 26.5-32.9), with the prevalence increasing with age. The prevalence was 25.8% (95% CI, 22.4-29.5) in the 90-94 age group, 39.9% (95% CI, 32.6-47.5) in the 95-99 group, and 43.5% (95% CI, 27.1-60.5) in the 100+ age group. Frailty was found to be generally higher in women than men (OR 1.4, 95% CI, 1.0-2.0) and significantly associated with living with relatives or a caregiver (OR 2.5, 95% CI, 1.7-3.6) or in a group setting (OR 3.5, 95% CI, 2.3-5.2). In general, greater education corresponded to lower odds of frailty (OR 0.7, 95% CI 0.5-1.0), though not significant ($p=0.10$). Subjects who had never been married tended to have higher odds of frailty when compared to being married (OR 1.8, 95% CI 0.8-3.8), though also not found to be significant ($p=0.14$).

Discussion: Our findings are in concordance with those suggested by preexisting literature. The prevalence was found to be high in the oldest old, increasing with age. It was also found to be higher in women than men, associated with living with others, and in general, greater in those with lower educational status and never married. To our knowledge, this is the largest study focusing on frailty in the oldest old.